ELECTRICAL WEST

In This Issue

The Manufacturers Directory..and "Where To Buy In The West"

•

APRIL, 1934 McGraw-Hill Co. of Calif. Twenty-Five Cents per Copy

"Your new method of merchandising has certainly helped us, and I am sure has been a big aid toward preserving the public good will toward the company."
"The coming year offers exceptional opportunities for electric appliance sales and we are putting forth a great deal of effort to increase our sales in this department."
"At no time in the past has the electrical dealer had such an opportunity for building a profitable electric range business."
"...I wish to take this opportunity to thank you for what you have done for the little electrical dealer."

APPRECIATION!

Electrical appliance merchants throughout Edison territory were prompt to grasp the significance of this Company's New Deal for the Purchaser.

Letters from every community served by Edison bring such enthusiastic comments as those quoted above. Sales reports from the earliest weeks of the program now being carried out, justify this new confidence and optimism.

April brings another selling drive, backed by extensive advertising and carefully-planned cooperative effort on the part of the Edison organization and allied merchants.

Each successive month is establishing more conclusively than the one preceding, the fact that buying-power is back in Southern California.

SOUTHERN CALIFORNIA EDISON COMPANY LTD.

ELECTRICAL WEST (with which is consolidated The Journal of Electricity), April, 1934, Vol. 72, No. 4. Published monthly by the McGraw-Hill Company of California, 883 Mission St., San Francisco, Calif. Entered as second class matter at the post office at San Francisco under the Act of March 3, 1879. Printed in U.S.A. Subscription rate in U.S. and U.S. possessions, $2 per year; Canada, $2.50 including duty; all other countries $3 gold (thirteen shillings). Single copy, 25c. Copyright 1933, McGraw-Hill Company of California.

the New ELECTRICAL WEST

Volume 72—No. 4
for April, 1934

The Editors Think Out Loud

SALESMEN who heard National Refrigeration Bureau's "Doc" Allison when he was on the Pacific Coast recently could not help but get inspiration from some of his punchful utterances. Here is one for the lighting men who may not have heard him: "Which would you rather have, electric bills and somebody to read them to you or electric bills and eyes to see them yourself?" And the whole industry can take heed from this remark, "The public is apt to think just what the industry thinks." Here is another: "When a customer and a salesman meet, somebody gets sold. And it's not always the customer."

▼

When business is a matter of gambling, rather than selling on merit, the popular idea is that when a job, a contract, a bill of materials or an order is obtained in competition it is "won." There are times when to "win" under such circumstances, is to lose—lose in profit, in cost, yes, even in self respect.

▼

Boost Appliances

Pity the small appliance, how it has waned and pined while major industry sales effort has been put behind ranges, refrigerators, water heaters and other heavy equipment. Now small appliances are to have their day in the sun, with a national promotional effort designed to popularize table cookery.

"A gold mine of opportunity" is the way one power company merchandise manager expresses the possibilities offered by intensive cultivation of the small appliance market. Lack of utility promotion has, perhaps, been due to the apparent unfavorable load-building comparison between a clock and a refrigerator or a sunlamp and a range.

Revenue from a clock will average 85c. to $1 per year in this territory. If 300,000 customers bought clocks, the annual revenue would exceed $250,000. The jump from 2 watt-hours in the case of one clock to $250,000 per year is just seemingly too great to comprehend. Sunlamps furnish another similar example. Rated at 450 watts and with an average use of 180 hours per year, 1,000 of these appliances would consume 52,056 kw.-hr. In fact the sunlamps so'd by one manufacturer alone in the Western states since 1929 have consumed 1,395,000 kw.-hr. and brought an average annual return of $83,000.

So it is with toasters, percolators, grills, and waffle irons. Individually their load-building possibilities may seem small; multiplied by the sales opportunities, the market warrants wholehearted support being put back of the table cookery program.

▼

Added Insult

Imagine how the sales department of an electric utility in southern California, which is offering free range wiring, felt when a customer called up and said that he had just bought one of the new gas ranges with an electric light and an electric clock on it, and wanted to get the electric utility to install the wiring free for a convenience outlet with which to plug in his gas range control and lighting.

▼

Cut Off the Nose

One of the saddest miscarriages of zeal for economy is to be found in those municipalities where electrical inspectors are dropped from the payroll to save city operating costs. Trained inspectors thus dropped are merely added to the increasing rolls of men on relief endeavoring to keep busy doing something useful. The pity of it is that in their inspection jobs they can do so much more to benefit their communities than they can by working on roads or parks. And their work as inspectors can increase the need for work by electricians, contractors, material suppliers, manufacturers and utilities—a long chain of benefit. Not only that, but such re-inspection work can be made to pay its own way in the license and permit fees which support such electrical inspection work. City councils should not cut off the nose to spite the face in this short-sighted fashion.

▼

Railroad Pattern?

Commenting upon the reversal of public attitude towards the railroads, a Pacific Coast industrialist recently said to one of the editors:

"For a long time the railroads thought they were simply in the business of running a railroad and not that of providing the public with real transportation service. Now they have waked up—almost too late—and have reduced rates, instituted store-door pickup and delivery and done a lot of other things to win public favor. They are getting business from me now that formerly went to trucks."

He had a point to make, but it was not clear until he heatedly started on the electrical industry as follows:

"From dealings with power companies in some of the cities where we have plants, I'm convinced that a lot of them still think their business is solely that of operating power systems and not that of selling electrical service and convenience in a market that is getting more competitive every day. That's why we have just replaced some electric motors with steam turbines."

▼

Barn Door Closed

Said his honor, the Mayor of Sacramento, in urging that the city operate its own distributing system, rather than joining a district composed of a larger area, "We're in this thing to make money and I think the city can make more money by avoiding being in the same system as a rural area." And the rural area, which helped vote the California state water plan, may well believe now that there is something to the power companies' claim that the best system is one in which the city dweller cream business helps the utility to extend facilities to scattered farms which bring only skimmed milk revenue.

—Read

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Helps you in these Three Ways

There are three major reasons why Frigidaire enjoys the standing it does among public utility companies.

First . . . of all electric refrigerators, Frigidaire has greatest appeal to buyers. There are a million *more* Frigidaires in use than any other electric refrigerator. This great, popular preference for Frigidaire means *less* selling cost and effort for the utility company.

Second . . . the completeness of the Frigidaire line multiplies sales possibilities many fold. It includes household refrigerators for *every* type of prospect; commercial coils and compressors; milk cooling, water cooling, beer and bar cooling equipment, as well as a complete line of air conditioning equipment.

Third . . . Frigidaire is an important load-builder for public utilities. Every Frigidaire sale means a permanent increase in power consumption.

Add to this, the fact that Frigidaire thoroughly appreciates the value of the public utility company as an outlet for Frigidaire products. Because of this appreciation, Frigidaire has made a careful study of the problems and needs of public utility companies.

Thus, Frigidaire is able to offer not only the products themselves —but an *Individualized Sales Service*, as well . . . sales plans specifically adapted to the individual public utility company.

For details regarding this service and for information about the Frigidaire franchise, write to the Public Utilities Division, Frigidaire Corporation, Dayton, O.

Frigidaire

A PRODUCT OF GENERAL MOTORS

HERE'S A RANGE THAT WILL GET BUSINESS FOR YOU

The NEW Popularly Priced *Triumph*

Now you can go after range business in a big way. Hotpoint presents a modern, full size table top electric range styled for built-in, all-electric kitchens—priced for the thriftiest purse. The *Triumph* is built and priced to get business in 1934.

Look at these Features

1. Entirely new principle of construction—all steel body, welded in one piece, provides greater rigidity and relieves strain on enamel parts.
2. New design automatic oven temperature control.
3. Pilot light on switch panel indicates when oven is up to temperature.
4. Large utility storage drawer.
5. Hi-speed Calrod Surface Units (open coil optional).
6. Economical Thrift Cooker.
7. Stainless porcelain enamel top.
8. New flush-type counter-balanced oven door with concealed roller catches.

Other Features

Porcelain enameled drip tray; appliance outlet; Timer Receptacle; Safety Plug connectors for all surface units; molded Textolite door and drawer handles; both oven units controlled by a single switch; automatic oven timer and clock *(slight additional cost)*.

Get Your Orders In Early

The volume of orders now piling up for the new *Triumph* is conclusive proof that this remarkable range will be the most popular electric range in 1934. Build your spring and summer activities around this fast selling model. Hotpoint gives you not only this outstanding product, but gives you a most efficient plan for selling. You have the services and co-operation of a thoroughly trained group of range selling specialists and home economists. Get in touch with the Hotpoint district office nearest you for complete details.

Edison General Electric Appliance Co., Inc.
5612 West Taylor Street, Chicago

NEW IMPROVED HI-SPEED

Calrod

The new, improved Calrod unit is unbelievably durable. The bruising thumps of pots and pans; the devastating effects of spillage; the punishment of long hours on high wattage, leave Calrod as good as new. Accelerated life tests indicate an average life of 7½ years. It may live for years beyond that. Utility executives, retailers and housewives, in every section of the country, enthusiastically praise the performance of this spectacular new Calrod unit.

THE LOWEST PRICE RANGE EVER OFFERED WITH SUCH CAPACITY, STYLE, FEATURES AND HOTPOINT QUALITY

Hotpoint

Presenting

Whether you use open wiring, weatherproof or tamper-proof cable, or flexible or rigid conduit, I-20 Metering enables you to select standardized accessories that will meet many requirements of indoor and outdoor installation

Both the I-20A and I-20B meter units are designed to fit standard meter trims on service-entrance cabinets. Or, as illustrated, they can be equipped with die-cast aluminum pull boxes. Type I-20C is fully protected, completely armored.

G E N E R A L

the ABC *of*
I-20 METERING . . .

. . . a simple, economical method of meeting diverse installation practices

The development of I-20 metering has centered around the famous G-E Type I-16 watthour meter. In fact, many of the essential features of the I-16 have been retained, so that a dependable, accurate meter unit is assured. Furthermore, important mechanical improvements have made possible a simple, economical method of meeting many different installation practices.

A The standard house-type meter is called the I-20A. It fits into every conventional installation where the I-16 or similar meters might be used, and it gives you the added advantages of an improved glass cover, a die-cast aluminum base, and a noncorrodible sealing arrangement to meet all climatic conditions.

B When you desire safety-disconnect and reconnect features (and, incidentally, test facilities) to take care of the new meter sequence, you should specify Type I-20B. This meter is identical with Type I-20A, except the terminal blocks and the cover. The conventional terminal construction of the I-20A is replaced by an improved type of safety-disconnect-terminal block, so that the I-20B makes available a complete unit, with all the necessary facilities under the terminal cover.

C The Type I-20C meter is for the fully protected, completely armored installation—indoors or out. The meter unit has the same safety-disconnect-terminal block as that used in the "B" meter, but the connection block to which the line and load wires are secured is mounted in the base of the protector case. This makes the meter unit completely detachable.

I-20 metering enables you to use a standard meter unit, and select the accessories that will best meet the conditions of the individual installation. Up to this time, no other method of metering has provided an equally wide range of flexibility. Ask the nearest G-E office for further information, or write direct to General Electric, Dept. 6 C-201, Schenectady, N. Y.

NRA WE DO OUR PART

400-1

ELECTRIC

WESTON MODEL 705
Contact-making Indicator
Size, 3¼" diameter, made for either flush or surface mounting, single or double contact. Scale may be calibrated for current, voltage, temperature, etc.

THE WESTON *Supersensitive* CONTACT-MAKING INDICATOR

low operating values • high contact capacity
contacts made and held magnetically

Here is a sensitive relay that will make contact on values down to three microamperes or one millivolt, with contacts capable of handling five watts at 110 volts, non-inductive load. It's the new Weston Model 705 . . . the first relay of such sensitivity ever produced capable of handling this amount of energy on its contacts.

And Model 705 employs a radically new principle of contact-making. A few microamperes swing the moving contact into the field of the permanent magnet stationary contact which pulls the moving contact in positively and holds it tight until contact is broken manually or automatically.

Model 705 greatly broadens the fields of application for sensitive relays and simplifies many existing problems. It permits of control by means of small electrical quantities such as are generated by photo-electric cells, thermocouples, etc. It has been found ideal for alarm and protective systems, smoke-detection devices, paper-break detectors, etc., as well as for temperature control.

Complete information on Weston Model 705 Contact-making Indicator and other Weston relays is available and will gladly be sent on request . . . Weston Electrical Instrument Corporation, 577 Frelinghuysen Avenue, Newark, New Jersey.

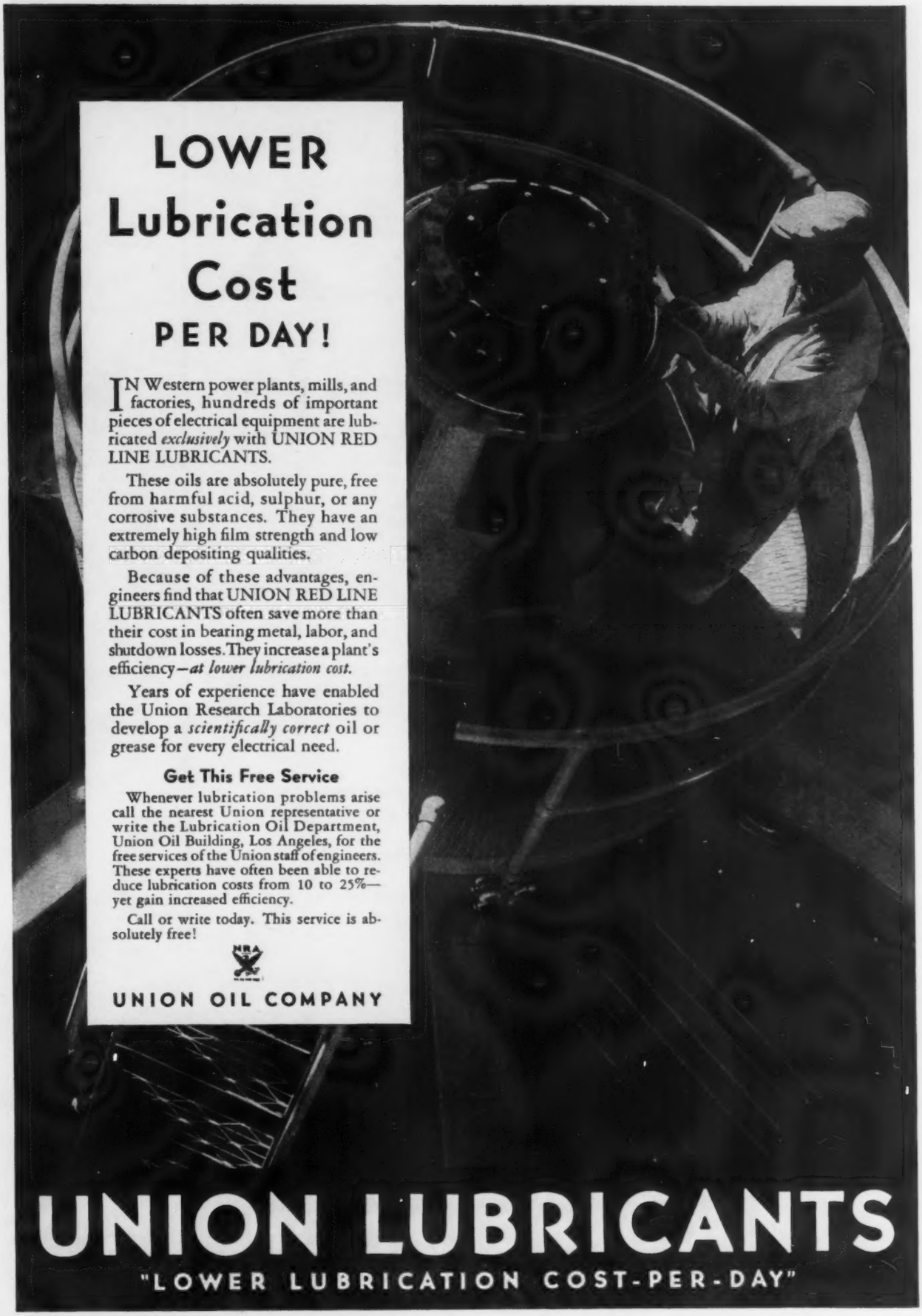
WESTON *Instruments*

PACIFIC COAST REPRESENTATIVES

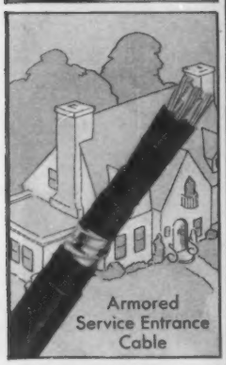
Eicher & Bratt,
263 Colman Bldg.,
Seattle, Wash.

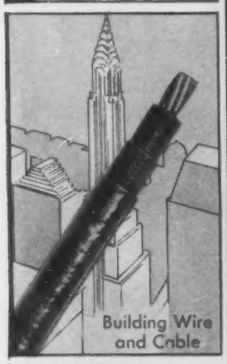
C. F. Henderson,
Call Bldg.,
San Francisco, Calif.

Elec'l Engr. Sales Co.,
Subway Terminal Bldg.,
Los Angeles, Calif.


LOWER
Lubrication
Cost
PER DAY!
IN Western power plants, mills, and factories, hundreds of important pieces of electrical equipment are lubricated *exclusively* with UNION RED LINE LUBRICANTS.
These oils are absolutely pure, free from harmful acid, sulphur, or any corrosive substances. They have an extremely high film strength and low carbon depositing qualities.
Because of these advantages, engineers find that UNION RED LINE LUBRICANTS often save more than their cost in bearing metal, labor, and shutdown losses. They increase a plant's efficiency—*at lower lubrication cost.*
Years of experience have enabled the Union Research Laboratories to develop a *scientifically correct* oil or grease for every electrical need.
Get This Free Service
Whenever lubrication problems arise call the nearest Union representative or write the Lubrication Oil Department, Union Oil Building, Los Angeles, for the free services of the Union staff of engineers. These experts have often been able to reduce lubrication costs from 10 to 25%—yet gain increased efficiency.
Call or write today. This service is absolutely free!
NRA
UNION OIL COMPANY
UNION LUBRICANTS
"LOWER LUBRICATION COST-PER-DAY"

Type H Cable

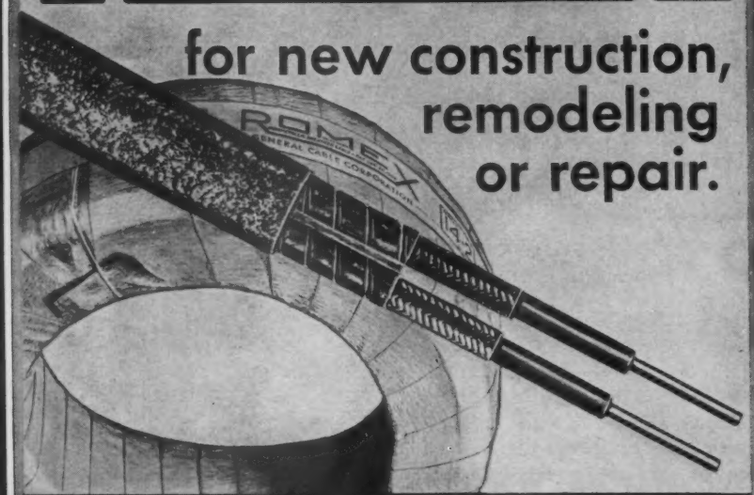

Armored Service Entrance Cable


Building Wire and Cable

Trenchlay

Varnished Cambric Cable

Recommend house wiring with ROMEX NON-METALLIC SHEATHED CABLE for new construction, remodeling or repair.



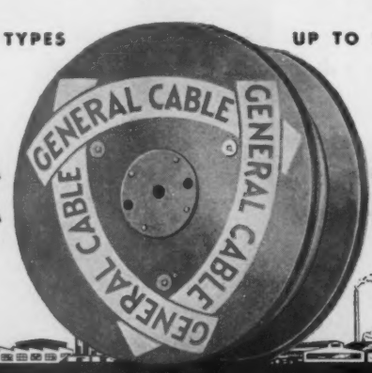
ITS LIGHT WEIGHT, EASE OF HANDLING AND INSTALLATION . . . SAVE ELECTRICIAN'S TIME

BARE AND INSULATED CONDUCTORS FOR TRANSMISSION AND DISTRIBUTION

Paper • Varnished Cambric • Rubber

ALL SIZES AND TYPES — UP TO 290,000 VOLTS

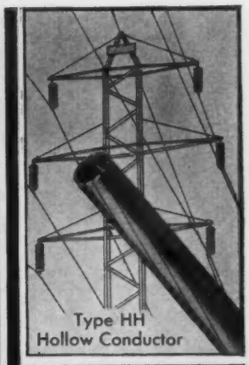
A STANDARD OF QUALITY

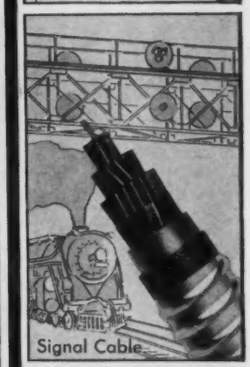


FOR OVER HALF A CENTURY

GENERAL CABLE CORPORATION

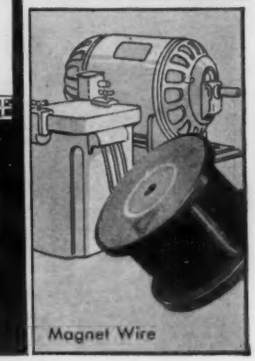
OFFICES IN PRINCIPAL CITIES


Type HH Hollow Conductor


Signal Cable

Submarine Cable

Super Service Cord


Magnet Wire

ROEBLING
PAPER *Insulated* CABLES

Roebling Type H Impregnated-Paper-Insulated Cables represent the highest development of Roebling cable engineering and construction. Electrically and mechanically, they measure up to the most exacting standards.

These cables meet the design, manufacturing, test and guarantee specifications prepared by the High Tension Cable Committee of the Association of Edison Illuminating Companies in consultation with the Insulated Power Cable Engineers Association.

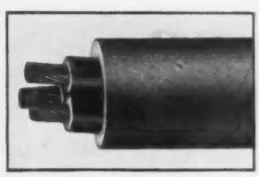
Paper Insulated Cables by Roebling are made in single and multiple conductor constructions. Also unshielded.

OVER 60 OTHER TYPES

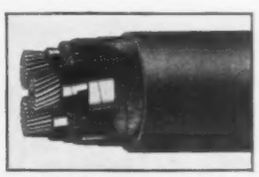
Power Cables: Paper; Cambric; Rubber » Parkway Cable » Tree Wire » Service Cables » Station Cables » Rubber Covered Control Cables » Rubber Covered Wires and Cables: Code; Intermediate; 30%; 35% Signal; 40% Performite » Slow Burning Wires and Cables » Weatherproof Wires and Cables » Submarine Cables » Portable Cords » And a wide variety of other wires and cables.

JOHN A. ROEBLING'S SONS CO. OF CALIFORNIA

San Francisco Los Angeles Seattle Portland

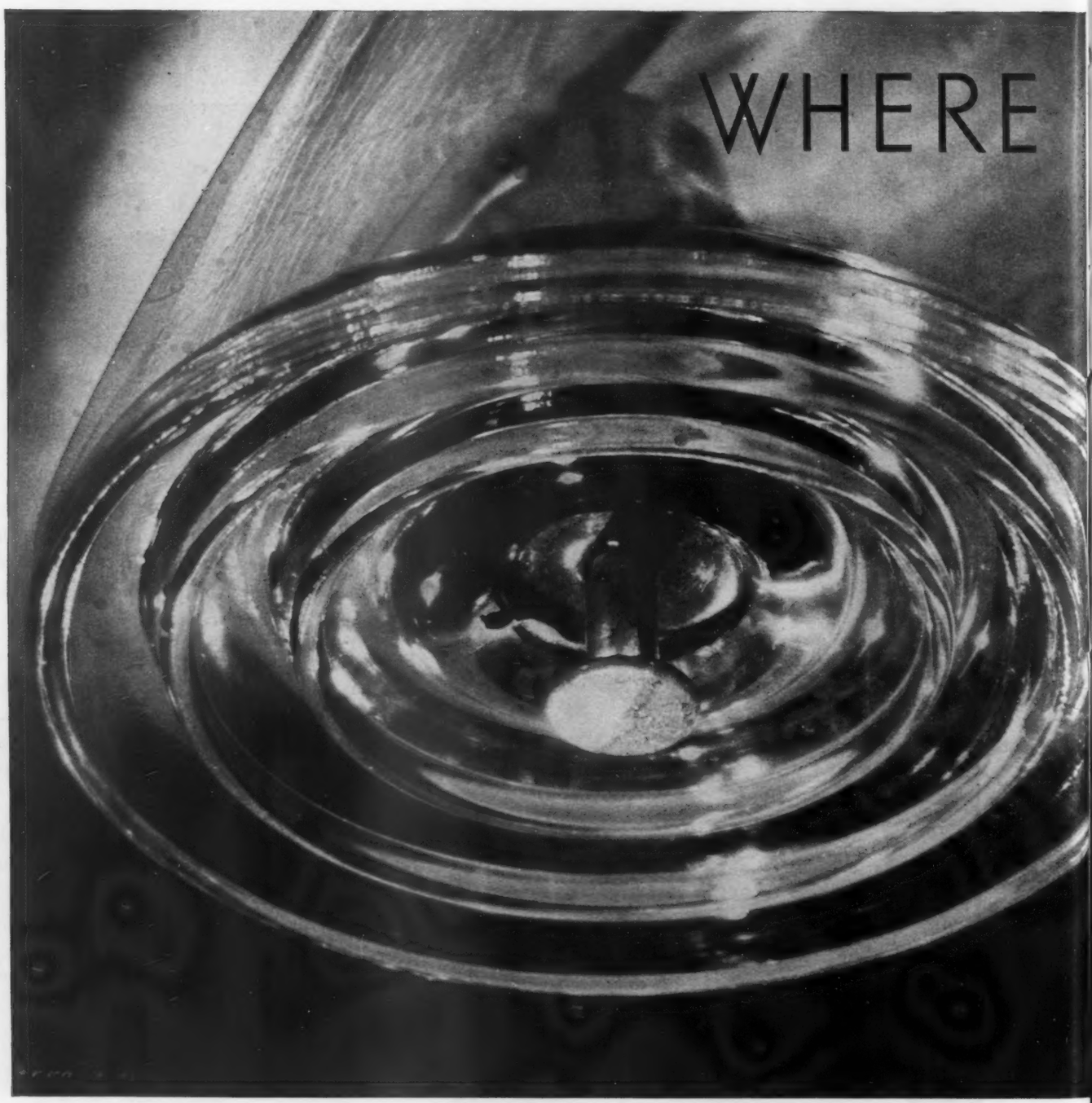


Roebling Rubber Insulated Cable.



Roebling Varnished Cambric Insulated Cable.

ONLY A FINE PRODUCT MAY BEAR THE NAME ROEBLING



CORNING LABORATORIES have likewise removed the hazards of operation from other industries where this removal has meant widespread importance in point of safety and better operation. In such fields as railroad and marine signalling, airway beacons, etc., the scientific development of special glasses giving purer color indications, greater visibility at night, greater resistance to temperature changes are but representative of the work of Corning Laboratories for scores of industries.

PERFECTION IS *Visible*

• More important than a man's ability, are the *facts* he has to work with.

A hidden fact may spoil a business picture as surely as a hidden flaw may spoil the best designed insulator.

With the Pyrex Power Insulator ALL the facts of condition are on the table. Transparency provides no hiding place for flaws.

Even internal strain can be detected and prevented in manufacture.

Its whole construction from molten to solid is VISIBLE. Every one of our men, and also your men, who handles a Pyrex Power Insulator is an inspector.

Hazard and guesswork form no part of this insulator.

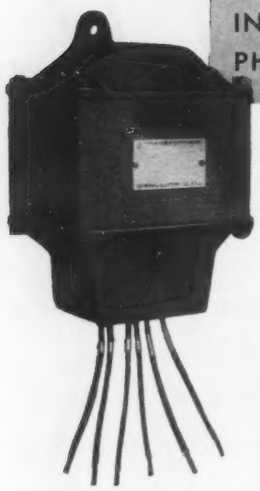
"PYREX" is a trade-mark and indicates manufacture by

CORNING GLASS WORKS • CORNING, N. Y.

Pyrex SUSPENSION AND STRAIN INSULATORS

HERE is the TRANSFORMER you need for.....

REDUCING VOLTAGE
BALANCING VOLTAGE
BOOSTING VOLTAGE
INSULATING CIRCUITS
PHASE CHANGING



G-E air-cooled transformers will economically provide circuits of the correct voltage or proper number of phases for the operation of your customers' equipment. They will meet practically any requirement at 600 volts and lower.

These units are easy to install and may be placed anywhere, since they are compact, require no fireproof vaults, and are neat in appearance. Service records show that they need practically no inspection or maintenance.

You will find, too, that these transformers can be installed to advantage around your own plant or substations, where low-voltage transformation is required.

May we send you a bulletin giving full descriptive and application data? Just mail the attached coupon.

GENERAL ELECTRIC

General Electric,
Dept. 6-201, Schenectady, N. Y.

Please send me a copy of your bulletin GEA-897D, "Air-cooled Transformers."

Name .....

Firm .....

Street .....

City..... State.....

320-26

ECONOMICAL • AUTOMATIC

$8.25

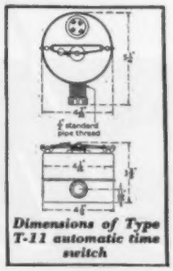
HERE'S MORE PROFIT FOR YOU

Install this dependable Time Switch for controlled water-heating units

This low-priced, reliable time switch provides a convenient automatic control for circuits operating on a fixed daily schedule. Its dependability and accuracy assure you of added profit by providing the right control, with freedom from regulating and maintenance problems.

Since its contacts interrupt noninductive loads without arcing, and, therefore, without radio interference, this switch is ideal for domestic off-peak water heating.

As illustrated, it is a small, compact unit, easy to install. Complete with 115-volt switch and motor, it is available at $8.25, or with 230-volt switch and motor at $8.75.
For further information, call the nearest G-E sales office, or address General Electric, Dept. 6-201, Schenectady, New York.



Dimensions of Type T-11 automatic time switch

440-39

GENERAL ELECTRIC

ACCURATE • RELIABLE

Window display that helped sell 70 G-E Washers in 14 days for The Collins Electric Co. of Springfield, Mass.

And 21 in a single day.

Let the doubters doubt. Let Jake and all the skeptics "*skep.*"

Nevertheless, we have the record in black and white—we have the figures right in front of us as we write—that the Collins Electric Company of Springfield, Mass., sold 70 G-E Washers in 14 days . . . and, believe it or not, *21 of those sales in a single day!*

Here he is again

"Oh-oh," Jake butts in, "those salesmen must have gone from door-to-door talking the arms off housewives."

Jake's wrong again. The iron fact is that most of those G-E Washers—90%

in truth—were store sales, *not* canvass sales.

How did they do it? Here's how: They followed G-E's plan of action. They used in their local paper, ads that G-E prepared for them. They used G-E counter displays—G-E window trims. Booklets, pamphlets, every bit of promotion material we sent them were plugged until the cows came home.

You may think that the Collins outfit were super-salesmen — that once they got a prospect they grabbed her sleeve until she signed. But no—such is not the case. The Collins bunch had no advantage over anybody else. But they *did* have the will to win. They *did* have the vision to follow through. And results were more than worth the effort.

During the 1934 Spring Drive—*the "Prove It" Campaign*—you have your chance to make a record, too. Special sales plans, promotion material—will be sent you free! Mail the coupon, today. It will bring you all the information.

MAIL THIS COUPON

J. M. Wicht, Mgr. Home Laundry Equipment Sales, General Electric Co., Section H-714 Mdse. Dept., Bridgeport, Conn.

I would be greatly interested in hearing more about your line of Home Laundry Equipment and the 1934 Spring Drive.

*Name*_____

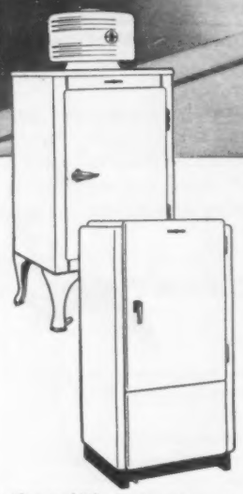
*Address*_____

GENERAL ELECTRIC

Home Laundry Equipment

now! 5 YEARS

● The first electric refrigerator to carry a 2-Year Guarantee—first with a 3-Year Guarantee—and first to give a 4-Year Service Plan—now offers 5 YEARS' PROTECTION on its famous sealed-in-steel Monitor Top mechanism for only $1 a year! A complete 1-Year Standard Warranty free, and four years' additional protection against failure of the sealed-in-steel mechanism for only $5.00.



General Electric announces two new refrigerators for 1934 —the new de luxe Monitor Top with the 5-Year Protection Plan, and the new de luxe G-E Flat Top with standard 1-year warranty.

AGAIN General Electric proves its faith in the unfailing performance of the Monitor Top by offering even greater protection to G-E refrigerator buyers than ever before. Public preference for the Monitor Top has been built on its unparalleled service record, backed by the broadest guarantee in refrigeration. The new 5-YEAR PROTECTION PLAN now demonstrates to buyers of electric refrigerators that it is General Electric's ambition to build *lifetime* performance into every Monitor Top mechanism.

It means that General Electric refrigerators will have even greater public preference than ever before. It means more sales, more profit, more good-will for G-E dealers. If you are not already a General Electric refrigerator retailer, write or wire for details of the G-E Franchise, to the G-E distributor below whose address is nearest you.

GEO. T. BAUDER CO.
SAN DIEGO, CAL.

ELECTRIC APPLIANCES, INC.
SAN FRANCISCO, CAL.

VALLEY ELECTRICAL SUPPLY CO.
FRESNO, CAL.

GEO. BELSEY CO. LTD.
LOS ANGELES, CAL.

GENERAL ELECTRIC SUPPLY CORP.
PORTLAND, ORE. • BUTTE, MONT. • SALT LAKE CITY, UTAH

B. K. SWEENEY, INC.
DENVER, COLO.

GENERAL ELECTRIC

ALL-STEEL REFRIGERATORS

THREE star performers for your Summer Campaign..

1. The new Everhot Table-Service electric Cooker—styled to meet the vogue in electric table cookery. Removable aluminum insert—easy to clean. Pyrex glass cover—see the food cook. Detachable bail-lock to carry the cooker on picnics, motor trips and the like. Cheaper to cook with. Saves food and time. Provides for a cool kitchen. No watching. No. 17, as pictured, $10 list. No. 16, less utensils and rack, $8.50 list.

2. The popular Everhot electric Casserole. Real table cookery — cooks all kinds of scalloped dishes—roasts and bakes. Enameled finish. No. 12 with aluminum insert, $6.75. No. 7 without insert, $5.95 list.

3. The Everhot electric Compakt—a complete electric cooking appliance. 450 degrees, oven heat in five minutes—toasts eight slices in three minutes—bakes and broils by standard cooking methods. Equipped with an aluminum roaster-oven. $13.50 list. Seven other Compakt models listing up to $25.

Everhot

THE SWARTZBAUGH MFG. CO.
Toledo, Ohio

Tie in these three star performers to your table cooking campaign. Get details, a complete catalog and discounts from your distributor—or write direct.

THE LOWBOY IS HERE!

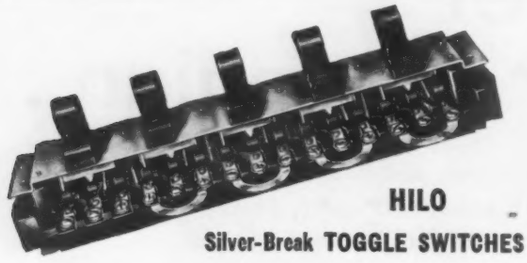
HILO Silver-Break TOGGLE SWITCHES — DRAWER ACTION OVEN

WALKER & PRATT ANNOUNCE ADDITION TO GRAYBAR-CRAWFORD LINE

RADICALLY DIFFERENT DESIGN · SENSATIONALLY NEW PRINCIPLE OF SWITCH CONSTRUCTION AND CONTROL · · · · · AT A PRICE ASTONISHINGLY LOW

IN the Crawford Lowboy is embodied an entirely new principle of switch construction that is being hailed by leading engineers as an outstanding contribution to the Electrical Industry. For the first time an electric range is being built with switches designed for this specific use. It means less service and lower maintenance cost, longer lived unit coils—simpler range operation.

The DRAWER ACTION Oven removes the chief objection to the table top design and is an entirely new sales feature that will be instantly recognized by prospective range buyers.



HILO
Silver-Break TOGGLE SWITCHES

Simple in construction and operation.

Trouble proof and positive acting.

Tested and endorsed by leading electrical engineers and testing laboratories.

Compare the above assembly with those with which you are familiar.

ENGINEERS: We shall gladly give you details of construction and operation—and proof of the outstanding qualities of this switch.

CRAWFORD LEADS AGAIN!

First with Triple Automatic Control—Built-in Timer — Illuminated Oven — Vertical Broiler—

and now — DRAWER ACTION OVEN
HILO Silver-Break TOGGLE SWITCHES

Graybar Crawford

DISTRIBUTED BY GRAYBAR ELECTRIC CO.

The Crawford Lowboy will strengthen the best range program. Write or wire for detailed information; and prices that will surprise you.

WALKER & PRATT MANUFACTURING COMPANY

31 UNION STREET, BOSTON

the New ELECTRICAL WEST

NRA . . .

. . . . Retail Authorities Set Up
. . . . Contractors Under a Code
. . . . Wholesalers Blanketed
. . . . Manufacturers Revise
. . . . Utilities Deadlocked

RETAIL Code Authorities are being set up in most cities of the West, with an annual code fee of a dollar per store. Details of operation are slow in being worked out. In some localities there has been nothing done, retailers failing to realize it is up to them to organize and set up the machinery of operation under the code. The government can't and doesn't want to do it for them. General Johnson made that plain in his address to the code authorities meeting in Washington.

Contractors

¶**Contractors** came under the construction industry code by subscribing to it. Meanwhile their sub-code is practically ready to be signed, and may be before this reaches print. Anticipating this, the N.E.C.A. national executive committee met, nominated seven code authorities from N.E.C.A., three from independents, had these approved. The Pacific Coast district authority representative is Lloyd Flatland, president of Northern California chapter and now national executive committeeman to succeed F. O. Sievers who resigned.

¶**Means of financing** code administration is being worked out. Probably a fee of $15 a year will be required of all electrical contractors, N.E.C.A. absorbing this for its members. Code authority virtually becomes the "executive committee" for all contractors as though all were members of a nationwide association.

¶**Colorado** electrical contractors joined the remainder of the construction industry in a big mass meeting in Denver to discuss organization to work under the construction code.

Wholesalers

¶**Electrical wholesalers** are now under a code, the general wholesaling code, although they still are working on a sub-code for the electrical supplies division. N.E.W.A. is determined to see this through. The general code covers general business practices but is lacking in some specific problems relating to electrical lines.

¶**Lighting equipment industry** has applied for a sub-code under the fabricated metal products manufacturing and metal finishing and metal coating industry. This does not cover reflectors or portable lamps, which come under the N.E.M.A. code.

¶**Motor shops** were withdrawn from the electrical contracting and construction industry codes, and will come under the electrical manufacturing code. This may prove a headache for N.E.M.A. since motor shops prime interest is in second hand equipment; N.E.M.A.'s in new equipment. To be interested in N.E.M.A.'s new equipment, motor dealers say, N.E.M.A. will have to provide longer discounts.

Manufacturers

¶**Amendments** to N.E.M.A.'s code, one of the first approved, were being discussed and thrashed over in both general industry meetings early in March and in Washington conferences with N.R.A. throughout the month. Meanwhile provisions of the code still hold as originally approved.

¶**Our Washington bureau** says, "There is impressive opinion within NRA that the open price provisions of the codes are fundamentally sound." This despite the squawk being made by a few manufacturers just now during the amendment hearings. "Without them," the opinion states, "some of the codes would collapse. Most of the objections can be met, it is believed, if time is given for explanation and education."

¶**Consumers boards** and propaganda regarding opposition to raising prices have given business the jitters. Despite the noise in the press, it is encouraging to get this report from our Washington office: "The Consumers Board at the NRA is using a rifle rather than a shotgun in its warfare on price gouging. Members of the board claim that they are allowing generous margins for increased costs, due to increased wages and lower hours and to the abnormally low prices of pre-code days. The Board, however, is keeping careful watch of the spread between costs and selling prices."

Utilities

¶**At Washington** the electric light and power code still is deadlocked. Problem facing both the industry and NRA authorities is to arrive at fair specifications for hours of work. Utilities hold out that nature of utility service and the different conditions found in large and small systems call for some differentiation and classification. NRA wants a 40-hour base week. Small utilities argue that this would be a burden on them; that 48 hours is essential for their operation on a sound basis. Reports from Washington are to the effect that the industry is being told that unless it agrees with NRA officials, the hours per week may be shortened to 36.

¶**Municipal utilities** in this territory protested loudly over the code provision that would place them under the same code authority as the private systems. Nothing more is heard on this score. It is understood NRA grants the fairness of those provisions governing situations where direct competition exists. Agreement on all controversial points is expected at any time now.

Our Code

¶**Speaking** of codes, we in the publishing business are now governed by the provisions of the "Code of Fair Competition for the Graphic Arts Industries." And, readers, it is an all-embracing document comprising some 68 printed pages with rules and regulations, definitions, penalties, reservations and amendments which affect some 15 industries allied with the business of printing and publishing, of which we belong to industry No. A-3. Authorities, compliance boards and coordinating committees are created in legions. But the heart of the code is contained in a few words under the heading, "Maintenance of Fair Competition."

We must

1. Keep our editorial independence inviolate.
2. Publish no misleading or untruthful advertising.
3. Maintain our circulation records in auditable shape and permit their examination.
4. File our advertising rates with our code authority and then maintain them.

¶**To Electrical West** these requirements are not new. As members of the Audit Bureau of Circulation and Associated Business Papers we have subscribed to and lived up to them for years. Our satisfaction is that from now on all our competitors must do the same.

Sales of the Month » » »

Electrical Wares Prove Boon To Housewives
RETAIL DEALERS IN GAS, ELECTRIC WARES ORGANIZE
Four Acres Of Dishes Washed In Fifteen Years
CLOTHES DRYER REGULATES SELF
CALIFORNIA LEADS IN POWER USE
For April and May Home Service...For Monthly Use In Excess of Your March Bill
Free ELECTRICITY
USE IT!
FREE ELECTRICITY
FREE ELECTRICITY
DEALER COOPERATIVE ACTIVITY
SEE YOUR DEALER!
You SAVE when you buy a WESIX
Now... at the lowest price in history
See Your Dealer Today
WESIX, INC.

"Free Electricity" Offer Stimulates Appliance Business in San Joaquin Valley

APPLIANCE merchandising is receiving tangible stimulation as the result of the San Joaquin Light & Power Corp.'s "free electricity" offer (**Electrical West**, March, 1934, p. 20), according to reports from the territory served by the company since the formal public announcement of the plan, March 18. Dealers, manufacturers and wholesalers are cooperating in a drive for business that augurs well for success of the program. Developments in connection with the campaign include the following:

On March 18 the plan was formally announced in a special seven-page electrical section in "The Fresno Bee." Two six-column by 18-in. advertisements of the power company were accompanied by 28 tie-in advertisements of retailers, distributors and manufacturers. In addition, there was a six-page special section in "The Fresno Shopping Guide," five pages in a Bakersfield, four in a San Luis Obispo and one and two pages in other daily newspapers in the valley.

Radio announcements are made three times a day, morning noon and night, in connection with time signals on station KERN in Bakersfield and KWG in Fresno. These radio programs will continue for a period of eight weeks.

A Retail Gas and Electric Appliance Society of Central California with membership composed of appliance retailers has been formed in Fresno. C. F. Cowan has been elected chairman with directors representing radio dealers, washing machine dealers, refrigerator dealers, gas appliance dealers, music dealers and other retail groups. Purposes of the society, as set forth in its constitution and by-laws, are: "To promote the sale of gas and electric home appliances, to better trade conditions among the merchants engaged in the retail gas and electric appliance business, and to cooperate with the utilities, manufacturers and jobbers in industry promotional plans."

Official endorsement has been given by the society to the "free electricity" plan and a program of cooperation has been worked out. Other promotional projects have been outlined for later in the year.

Although the society for the present is confined to Fresno, provision is made for the affiliation of other units in cities in the territory as occasion arises.

Every commercial lighting customer of the San Joaquin Light & Power Corp. and Midland Counties Public Service Corp. has been personally contacted by salesmen of the utilities. Many domestic customers have been contacted by employee groups who have been especially trained for this work.

Under the direction of Miss Mary Webber, of the Nela Park Lighting Research Laboratory of the General Electric Co., a school has been opened for training domestic lighting specialists. On April 1 a crew of five trained women will begin making lighting surveys in homes using sight meters. No calls will be made unless requested by a customer and the women will do no direct selling.

Two field men are actively engaged in servicing dealer windows throughout the territory. They are J. U. Berry and Harold Gustavson.

Valley Electric Supply Co.'s kitchen coach is making a tour of the territory. Space has been provided in the coach for dealers in each community to display the make of equipment each sells. Graybar Electric Co. also has its display coach touring in the territory as a sales aid to dealers handling Graybar appliances.

Every form of promotional activity is being used to promote the sale of appliances and electricity. Approximately 150 billboards carry the story. Direct-mail material is being sent to every customer served by the company.

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¶ **General Electric** home laundry equipment dealers are responsible for a "prove it" campaign which is to run for 60 days in April and May. This campaign incorporates all of the successful ideas developed by dealers in a sales campaign conducted last fall. Experiences of distributors and dealers support any claim made in connection with the campaign by actual proof. The backbone of the sales drive is a three-step sales plan which puts the full force of all sales efforts into getting leads, demonstrations and sales.

Alameda City Starts Merchandising Drive

New rates, new policy, new service are announced by the Board of Public Utilities, management for the Municipal Electric Light and Power plant of the city of Alameda, Calif., according to R. N. Harvey, secretary.

The new rate is similar to that recently adopted by San Joaquin Light & Power Corp. and P. G. and E. in that by the use of a limiting device or double-throw switch domestic consumers using ranges and water heaters or air heaters may receive all electricity after the first 170 kw.-hr. at 1 cent per kw.-hr.

The new policy and service is that the municipality will enter into the merchandising of the major load-building devices, ranges, water heaters and air heaters. The municipality, however, plans to continue its intensive cooperative work with dealers and in all of its advertising stresses dealers' displays and merchandise as well as that offered from it own floor. Installation costs on ranges will be absorbed up to $25. On water heaters and air heaters similar allowances are made. On air heating a construction deposit it put up by the customer and absorbed over a period of two years by deductions from the monthly bills.

Featured at the present time is the 32-gal. water heater, together with the automatic demand control, which will be offered for $3.62 a month added to the electric bill, paying out in a period of 24 months.

The new plan, according to Mr. Harvey, is inaugurated to increase the municipality's load which has been falling off slightly during the past two years. Last year free wiring on ranges was offered for all dealer sales and, while successful in increasing the number of installations and acquiring more load, did not go far enough or fast enough to build up the lost load. The present plan is inaugurated to stimulate the sale of these load-building appliances. A display has been placed in the office of the utility, Santa Clara Ave. and Everett St.

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Utah Water Heating Rate Is One Cent

New rates for "controlled storage" electric water heating, effective March 1, are now in operation in the territory of the Utah Power & Light Co. The rates, which were granted by the public utilities commission upon the company's own application, follow: (Net Charges)

$1.00 per month, which entitles the consumer to use 75 kw.-hr. during each month.

1c. per kw.-hr. for additional consumption.

This new rate is for off-peak service, supplied for a period of not less than 17 hours per day, periods when service may not be supplied being subject to the control of the company and depending upon load conditions on the distribution system and on the generating and transmission system of the company.

The rate applies to two-unit type water heaters of construction approved by the company; the upper unit and thermostat are to be located so as to heat not more than the upper one-third of the tank; the lower unit and thermostat to be located so as to heat the entire tank. The consumer will provide wiring in continuous approved metal conduit to connect the heating units with the fused entrance switch.

Service is measured by a separate meter, and no other form of service is required in connection with it.

A former rate of 2½ c. per kw.-hr., in combination with other forms of service, applied for water heating, with a kilowatt hour rate of 1½c. available after consumption exceeded 300 kw.-hr. per month.

This new form of "time controlled" storage water heating is optional with the consumer, as compared with the former service, and is expected to materially increase the company's water heating business.

An aggressive advertising campaign will be used to tell the public of this new water heating service.

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Society Features Vacuum Cleaners

Husbands were very definitely brought into the vacuum cleaner situation by the spring campaign of the Electric Appliance Society of Northern California which began March 15 and continued until the end of the month. Distributors of vacuum cleaners and of the Pacific Gas and Electric Co. subscribed a fund to finance the campaign designed to increase sales of various types of vacuum cleaners for the home. A large newspaper ad, 4x15 in. ran in two San Francisco papers, two Oakland papers, a San Jose, Stockton and Sacramento paper, and was surrounded by vacuum cleaner advertising of the distributors and dealers. Publicity and special pages also were built up for the campaign.

Large dealer display cards for windows and floors were provided in the Velvatone process (reproduction of the poster is seen on the pictorial page). Further stimulation to window displays was given by an offer of $50 in prizes for the best window trim. First prizes of $15 and second of $10 were offered in several communities. Winning windows will be shown in subsequent issues of Electrical West.

The theme "If Husbands Kept House, Spring Cleaning Would be Done With a Modern Vacuum Cleaner" was graphically used throughout the campaign. The society also employed an educational director to assist in making the campaign attain maximum sales results.

H. E. Caygill, of the Eurkea Vacuum Cleaner Co., was chairman of the vacuum cleaner campaign committee for the society. Distributors for the following makes participated: Apex, Eureka, General Electric, Graybar, Hamilton-Beach, Hoover, Premier, Royal, Universal and Westinghouse.

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Absent Treatment Sells Washers

Believe it or not, washing machines can be demonstrated and sold by means of radio. At least this is the experience of F. S. Fenton, Jr., Western regional manager of Easy Washer Machine Corp., as the result of the successful broadcasting being done by that company over N.B.C. The program is run as part of the N.B.C. Woman's Magazine of the Air, on Monday between 11:10 and 11:30 a.m. The program goes out over the network of stations in Spokane, Seattle, Portland, Los Angeles, San Francisco and San Diego; originating in San Francisco.

About 500 returns a day are received on the broadcast, varying very little from day to day, a surprising point despite the once-a-week broadcast. The returns are in the form of requests for a booklet which ordinarily sells at 25 cents, entitled "Making Home Laundry Easy." It is a washing help and suggestion book, in itself really valuable and hence desired by all who hear of it over the program.

The air program actually seeks to demonstrate the new Spiralator washing machine. It also ties in with the company's national advertising campaign in the Saturday Evening Post, a contest for 200-word letters. Such letters as are received in the West are sent on to Syracuse, but each inquiry for a booklet receives that booklet directly from San Francisco division headquarters. Names of those requesting books are then turned over to Easy dealers for follow-up and sale.

That the broadcast is bringing results definitely is shown by the response of prospects who come in to Easy dealers to see machines. They insist upon seeing and buying the new Spiralator machines despite other types on exhibit. Such definite reactions as "I heard the radio program" come from the visitor to the store.

Except in San Francisco, where the program originates, key dealers in each locality tie in on their local stations with 50 word spot announcements, thus getting the benefit of the advertising locally. Among dealers taking advantage of this part of the program are the May Co., Los Angeles; Meier & Frank, Portland; San Diego Consolidate Gas & Electric, San Diego; Crescent Department Store, Spokane; Bon Marche, Seattle.

Another interesting sidelight has been that several large dealers in cities outside of the range of the specific network used have asked that copies of the continuity be sent to them each week so that they can have a cast broadcast it from their own stations locally. Among these are Auerbauch Department Store, Salt Lake City, over KSL, and the Golden Rule Department Store, Boise, Idaho.

Electrical and mechanical equipment provide a new deal for women in this miracle house (left)

A recessed panel in the dining room ceiling contains colored lights that permit illumination to match costumes or moods

Tomorrow's House Today

There are no fuses to blow out. All circuits in the lower portion of the house are protected by this Nofuze load center in the basement (above). Lighting is made to serve. In the case of this dressing table (below) light is directed from panels at the sides and top of the mirror

Westinghouse's 87-Kw. "Home of Tomorrow" at Mansfield Sets Goal for Domestic Electrification

OFTEN discussed, the completely electrified home is a reality. Westinghouse engineers have just completed an eight-room dwelling in Mansfield, Ohio that becomes the new standard for measuring home electrification.

The accompanying illustrations indicate but a few of its more obvious electrical comforts. The total electrical load of 87 kw. includes nineteen built-in motors, the complete "weather-making" room of a modern air-conditioning system, the 320 lamps required for adequate illumination, reversed-refrigeration water heating, a variety of electric heating applications, and such novel innovations as an electrically heated serving cart, radio-operated garage doors, and a built-in coffee-maker.

Engineers say that the conveniences of the "Home of Tomorrow," even at today's prices, can be supplied in homes costing as low as $12,000. The electrical bill for the 1,500 kw.-hr. consumed a month would be far less than the wages of an untrained servant yet electricity does the work of dozens of trained servants.

Interpreted as to effects on power resources, if the 1,500,000 American homes costing $12,000 or more each utilized 1,500 kw.-hr. a month, the annual domestic consumption of electricity would increase from 12 billion to 35 billion kw.-hr. annually. Such an increase would require the construction of 15 power plants the size of Boulder Dam and other facilities costing a total of 4 billion dollars. An equal investment in appliances and equipment for utilization would be required to create the demand for this plant capacity. Such are the possibilities of the "Home of Tomorrow."

An automatic sliding door (above) separates dining room and pantry. Four corner brackets add to the unusual lighting effects in the dining room (below)

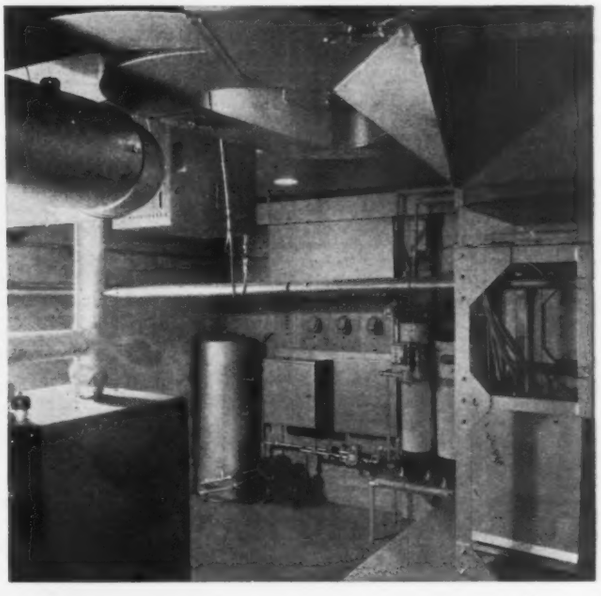
The laundry (above) is a real workshop. The washer is a three-unit clover-leaf model with centrifugal dryer in the center

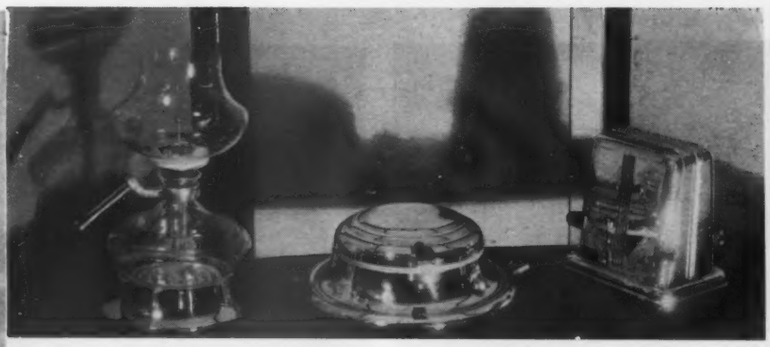
The serving cart (above) is electrically equipped, keeps food hot or cold until ready to be served in the dining room

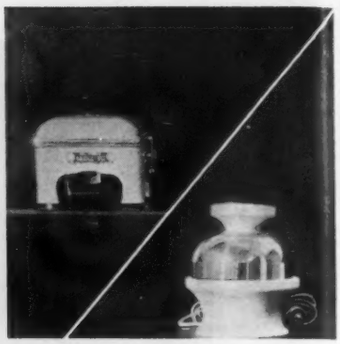
Refrigerator is built-in with a clock above that automatically defrosts it (left)

Cooking utensils are in a cabinet over the electric range (below). Note the lighting in the upper right corner

Garage doors are remotely controlled (above) either by the car radio or by a key that fits into a mechanism in the driveway. In the basement is the heart of the system that purifies, cleans, and heats or cools the air in the house (below)







"Electric Table Service Saves"

Edison Electric Institute Sponsors a New Idea and a New Program to Popularize Table Appliances. Six Months Campaign Aimed at Domestic Consumers in the Low Income Brackets

To tell the world that "Electric Table Service Saves" is the object of the Table Cookery Program announced by C. E. Greenwood, commercial director of the Edison Electric Institute. By popularizing and proving this slogan to the buying public it is hoped that the market for small appliances will be greatly broadened and increased revenue will be obtained from the smaller domestic consumer, particularly from those non-profit customers who represent a substantial percentage of the total. The program is a promotional effort to reach those customers who have limited spending margins and cannot be counted upon as immediate purchasers of the more expensive major load building appliances such as ranges, refrigerators, etc.

Starting in March and continuing for six months thereafter, the Table Cookery Program will be a coordinated, co-operative activity in which the utilities in each local area will take the lead to correlate sales efforts by manufacturers, wholesalers, dealers and utilities to build up a larger volume of table appliance business. Through advertising, exhibits and demonstrations, the public will be made to realize the convenience of table cookery.

Small appliances have been the stepchild of the electrical industry. Their growth in favor in recent years has been left largely to the furniture, hardware, and drug stores and they have lacked the advantages both of large national advertising campaigns by their makers and of promotional activity in their behalf by the industry itself. In spite of this they have proven to be a profitable item to those concerns which have pushed their sale.

Table Cookery Program

OBJECT: To build a market among those consumers whose spending margins prevent investment in larger electrical appliances, i.e. ranges, refrigerators, etc.

SPONSORS: Edison Electric Institute, and the Heating Device Division of N.E.M.A.

TIME: Starts in March and continues for six months.

SLOGAN: "Electric Table Service Saves."

OPERATION: A co-operative program of stimulation of sales and advertising activity locally on the complete line of household appliances. Utilities are expected to take leadership in the co-operative movement which will include manufacturers, wholesalers and dealers.

After viewing the results of co-operative activity on other electrical appliances, it appeared evident that the household appliance line could be made increasingly profitable for the appliance dealer and be developed into a revenue builder for the utility by similar promotional efforts by the industry as a whole. To initiate this activity, the Electric Table Cookery Program has been formed.

The Electric Table Cookery Program will be directed by a committee composed of D. M. DeBard of the Stone & Webster Service Corporation, chairman; C. E. Greenwood, commercial director of the E.E.I.; C. E. Swartzbaugh, president of the Swartzbaugh Mfg. Co.; R. W. Turnbull, General Electric Co.; and F. R. Kohnstamm, Westinghouse Electric and Manufacturing Co. A monthly news medium entitled "Table Cookery Topics" will be published and will serve as a clearing house for information on the development of the program as well as carrying stories of the leading sales activities on electrical tableware by all outlets.

What Western Merchandising Leaders Say About the Program

I know of no single asset of more value to the development and promotion of any product or class of products than national advertising. It is my opinion, and I believe that it is substantiated by the activity and results of the National Refrigeration Bureau, that any group who will take a liberal portion of their advertising money and pool it for the purpose of cooperative promotional advertising will reap a greater benefit than had the total amount been spent individually.

Unquestionably, this should hold for table appliances which have been out in the cold for several years. I can assure maximum effort in this territory to organize all interests to carry on local promotional activity.

L. W. Brainard, Sales Manager
Idaho Power Co.

WE gladly accept any organized effort which will lead the way to a greater number of appliance sales. It has been a tough job working alone. The small appliance business certainly has been neglected and a nationally organized effort behind it surely will be a great help. We welcome it.

H. H. Courtwright, President
Valley Electrical Supply Co.

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REVIVING interest in electric table appliances is most timely. The new slogan to be adopted, "Electric Table Service Saves," briefly describes to the household the advantage of many electrical appliances available. The industry has overlooked this vast field too long. A concentrated effort on the part of everyone will revive public interest in many household appliances. I believe that the table appliance industry is ripe for some "bang up" promotion.

H. C. Rice, Manager Merchandise Dept., Southern California Edison Co., Ltd.

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THERE is little doubt that in the last few years the major efforts to build domestic load have been concentrated on large current-consuming devices; therefore small heating and motor-driven devices have been forced into the background. Just as two of the largest fortunes in our country have been built up by a large number of low-unit-value sales, so can a huge domestic load be built up by encouraging the use of a tremendous number of these small appliances which individually consume few kilowatt-hours a year.

George S. West, Pacific Coast District Manager, Merchandise Dept., General Electric Co.

Edison Files One Cent Water Heating Rate

New lighting-combination domestic service rates designed particularly for the promotion of electric water heating have been approved by the California Railroad Commission for the territory served by the Southern California Edison Co. The new rates apply to domestic consumers having an electric range of not less than 5-kw. capacity permanently installed or where 5 kw. of aggregate major equipment capacity in air heating and/or water heating are installed.

For residences, flats or apartments of seven rooms or less the schedule calls for 25 kw.-hr. at 5 cents; 125 kw.-hr. at 2 cents with a provision that where an electric water heater is installed and used in conjunction with an electric range a discount of 1 cent per kw.-hr. will be made for all consumption not to exceed 10 kw.-hr. per month per gallon of tank capacity used in excess of 225 kw.-hr.

The water heater discount is applicable only where the heater is provided with an efficiently insulated storage tank and where the wattage rating of the base heating element, controlled by a thermostat located near the bottom of the tank, does not exceed 1,500 watts for tanks of less than 40-gal. capacity and does not exceed 40 watts per gallon of tank capacity for tanks of 40 gal. and over. An additional wattage of not to exceed 50 watts per gallon of tank capacity, but in no event more than a total of 2 kw. is allowable when used in a booster heating e'ement individually controlled by a separate thermostat set to cut in only when the temperature of the top one-third of the tank capacity is 20 deg. F. below the temperature setting of the bottom thermostat.

The schedule contains the reservation that the company may at its election and expense install a time switch on the water heater service to cut off the heating element, controlled by the bottom thermostat, between the hours of 5 p.m. and 9 p.m. or such other hours as the company may specify from time to time.

Minimum charges are specified at $3 per month for a consumer with an electric range, $6 per month for a consumer without an electric range and 30 cents per kw. per month for all over 10 kw. of connected load in major eqiupment.

For larger residences the initial blocks are increased by 25 kw.-hr. each. Outside the Los Angeles meropolitan area the charge for the initial block is 5.3 cents per kw.-hr. and in the San Joaquin Valley territory served by the company it is 5.6 cents per kw.-hr. In this latter territory all energy over 160 kw.-hr. per meter per month is billed at 1.5 cents per kw.-hr. with a water heater discount of 0.5 cents, making the net water heating rate 1 cent per kw.-hr.

With the filing of this schedule the major portion of California is now served with rates which make water heating available to the consumer at 1c. per kw.-hr.

▼

Contest and Display Sell Refrigerators

Combining an essay writing contest, a 6-day "Cook With Cold School" and a salon showing of new models, Lipman, Wolfe Co., Portland, worked out a sales program in 1933 which provided stimulation for refrigerator sales throughout the year. Features of the plan were such that it can be applied by any organization selling refrigerators.

Briefly, the refrigerator department of the store was turned into an aisle, along which a dozen new models were displayed. Each was elevated on a 24-in. platform and each was individually spotlighted. The aisle of refrigerators terminated in a stage on which were two of the new models, an electric range and a porcelain work table. Chairs were arranged in front of the stage for accommodating women who come to attend the scientific cooking school which was conducted each day between 2 and 4 p.m. The school was staffed by a home economist furnished by the local power company and a maid who assisted her. A large sign reading "Cook With Cold School" indicated the purpose of the stage.

Part of the display of new model refrigerators which helped launch a successful selling season for Lipman, Wolfe Co., Portland

During the 6 days of the school approximately 5,000 women attended. On the opening day 400 entry blanks for the essay contest were given out. Prizes for the essays included a $184.50 refrigerator as grand prize together with 25 cash credit allowances on the purchase of a new machine.

Attention to the cooking school and exhibit of new models was attracted by means of a window display in a corner window of the store at one of the principal shopping intersections of the city. In addition, there were a number of posters located throughout the store directing customers to the display. Interest was stimulated further through newspaper advertising.

Entry blanks in the essay contest and registration blanks at the cooking school furnished the company's sales organization with a large number of leads on which to work during the succeeding months. The management of Lipman, Wolfe Co. attribute its successful refrigeration season last year to the impetus this plan gave to its sales organization.

▼

B. C. Electric Consolidates Merchandising Activities

Received too late for inclusion in Electrical West's annual statistical number, February, 1934, have come some additional details and corrections to the British Columbia Electric Railway Co., Ltd., merchandising operations, as sent in by W. C. Mainwaring, merchandise manager.

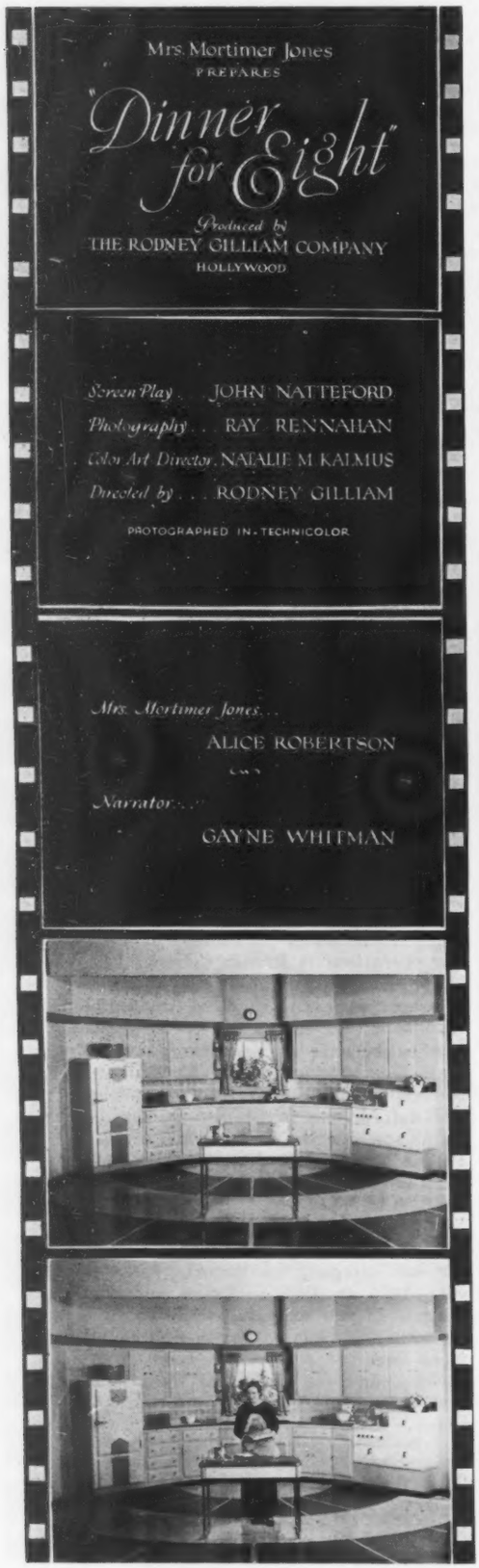
"Under ranges, water heaters and refrigerators you show B.C. Electric Railway Co., Vancouver, and then give some sales figures for 1933," he writes. "These are sales for our Victoria branch and Vancouver operations are not shown at all. The following is correct information on both Vancouver and Victoria as to 1933 sales and 1934 quota.

"The merchandise operation of our company is now all directed from Vancouver. On Jan. 1 our gas and electric merchandise departments were consolidated. We now have one executive office in Vancouver taking care of all of our operations in British Columbia, including, Vancouver, Victoria, New Westminster, Fraser Valley district, and Kamloops. In this area we maintain two salesrooms in Vancouver, one in New Westminster, one in North Vancouver, one in West Vancouver, one in Abbotsford, one in Chilliwack, one in Kamloops, one in Victoria, and one at Port Alberni where the operating company is known as the National Utilities Corp., Ltd.

"On the same page you also show kilowatt-hours per residential customer for our company in Victoria for the year 1929 to 1933 inclusive and for Vancouver you only show the figures for 1929 and 1930." Correct figures on these have not yet been received from the company and **Electrical West** naturally could only print the information which it had received up to that time.

British Columbia Electric Railway Co., Ltd.	Ranges		Water Heaters		Refrigerators	
	Sales 1933	Quota 1934	Sales 1933	Quota 1934	Sales 1933	Quota 1934
Vancouver, B.C.	371	500	322	200	182	325
Victoria, B.C.	110	106	65	30	60	36

Concentrated Appetizer



Two Hour Cooking School in Nine and Half Minutes Outdoes Reality in New Technicolor Talking Movie

A combination of science, art and advertising which achieves something of a triumph for all three has been produced in Hollywood professional movie studios in collaboration with Southern California Edison Co. Ltd. It is a talking picture, short reel feature, called "Dinner for Eight," which puts the intimate story of the goodness and superiority of electric cookery on the screen in colors so real that the audience can almost taste the food. The picture has just had its first previews and is already booked in downtown Los Angeles moving picture houses on its own merits.

"Dinner for Eight" has grown out of the success of electric cooking schools. Such schools have been conducted by all electric utilities and are familiar affairs. Yet each requires a long preparation, a great deal of paraphenalia, and much time. Even then the audience is far removed from the actual mixing and preparation process. It is impossible for each member of that audience to look over the shoulder of the home economist, and actually see the mixing and preparing process, which the demonstrator then tried to convey by word of mouth.

By means of this moving picture, with its magnified closeups, every member of the viewing audience actually sees the whole process at close range. A remarkable reaction to the film is that one has the impression that he has seen an hour or more of program, and actually it all takes place in 9½ concentrated minutes.

Science came into this project in the form of a new three-color Technicolor process, and with it such veracity of color that the food actually is reproduced in appetizing reality. This process was first used in the Disney Technicolor cartoon film sensation, "Three Little Pigs," and has as yet only been used in one sequence in a film feature. Every color and shade, not only of the food, but of the striking electric kitchen and of the table and its beatutiful dinner appointments and flowers, is faithfully recreated.

The story is a simple one, designed to contain all of the information ordinarily contained in cooking school and yet worked into the preparation of a "Dinner for Eight." No names of equipment are shown nor is there any commercial slant which would make it objectionable to any audience. It is treated entirely as a narrative and should be gladly accepted as a part of any entertainment program.

W. L. Frost, vice president in charge of sales of the Southern California Edison Co., Ltd., under whose sponsorship it was produced, was fortunate

throughout the production in having the full resources of the moving picture industry on the picture. It was produced by the Rodney Gilliam Co., of Hollywood. and had Technicolor's greatest technicians intently interested in making it. Ray Rennahan, Technicolor's photographic expert, personally filmed the picture. Natalie M. Kalmus, that company's color and art director, worked on it as a project of great significance. The screen play was by John Natteford, who worked closely with Henry C. Rice, merchandising manager of the Edison company in every detail. It has long been an ambition of Mr. Rice's to produce such a film.

Distribution and exploitation of the film is under the supervision of R. G. Kenyon, advertising manager of the Edison company and includes some far-reaching possibilities. First it will be made available to the commercial theaters in metropolitan areas for a first run short feature. Then it will be available to local and community theaters and then to private showings for women's clubs, schools, Parent-Teachers Assn. meetings, and cooking schools. It is even contemplated that prints will be made in the 16 millimeter size for small home projectors so that a woman can use it actually to teach herself how to cook, stopping at the recipe frames, repeating portions if necessary to make sure of details.

Prints of the picture are being made for sale to any company in the industry, either manufacturer or central station, to be used throughout the country. Another feature of the film is that it has been so designed as to become a middle episode in a series of similar films depicting other electric home features, which are in contemplation now. Combined, the series will take in every phase of electric homemaking and be of full feature length. The present episode, however, is complete in itself and so professionally well done that it cannot help but have a great influence upon the cooking habits and technique of all who see it.

Refrigeration Drive Planned for May

Feature of the campaign planned for electric refrigeration by the Electric Appliance Society of Northern California during the month of May is the hostess plan of demonstrating refrigerators throughout northern California. A. H. Meyer, of the Leo Meyberg Co., is the refrigerator and radio committee chairman of the society. B. W. Reynolds, Pacific Gas and Electric Co., is promotional director for the society.

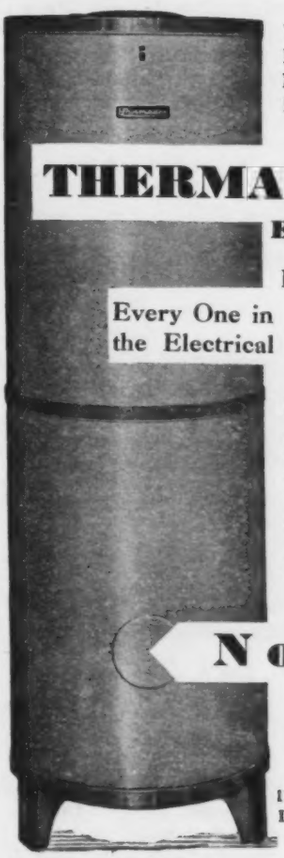
There will be four units of hostesses giving demonstrations in 35 offices of the Pacific Gas and Electric Co. during the period of the campaign. Miss Loretta LaMarr, home economist for the Electric Refrigeration Bureau of Northern California, will be hostess in the San Francisco, Oakland and Berkeley offices of the company. Miss Bertha M. Hixson will be hostess in the Salinas, Monterey, Carmel, King City, San Jose, San Mateo, Redwood City and Burlingame offices of the utility. Mrs. A. V. Farnsworth will be hostess in Stockton, Sacramento, Woodland, Marysville, Auburn, Grass Valley, Chico, and Red Bluff. Miss G. F. Bushy will be hostess in San Rafael, Santa Rosa, Petaluma, Napa and Sausalito.

Exhibits of refrigerators from participating dealers and distributors will be set up in each of these offices and every visitor to the offices of the power company will be given a demonstration of the refrigerators and samples of frozen delicacies prepared there in the display boxes. In addition to this hostess plan, an extensive advertising campaign is to be carried on with bill stickers, a refrigerator essay contest in "P. G. and E. Progress" and other activities of a similar nature.

Refrigeration Bureau activities in Northern California this year evidently will be undertaken by the Electric Appliance Society rather than the Electric Refrigeration Bureau.

▼

¶Hockenbeamer Trophy, a beautiful oil painting of Mt. Tamapais, by Clyde Scott, was last year won by the Drum division of Pacific Gas nad Electric Co. The award is given to the division having the most outstanding accomplishment in sales performance. Harry Furlong is division sales manager, with headquarters at Auburn, Calif.



WITH NEW LOW RATES *and*

THERMADOR

Everhot Water Heaters

Every One in the Electrical Industry Should Electrify His Own Home

Now!

WRITE FOR BULLETIN

116 Llewellyn St., Los Angeles, Cal.

Thermador Elec'l Mfg. Co.

• *Fewer*

People will have Washing *Troubles*

The acceptance of the Little Giant has established an all-time dealer's sales record—producing steadily increased dealer profits.

The franchise may be open for your territory. Why not ask? •

LITTLE GIANT, Inc., Ltd.
422 Hollis St., Oakland

LITTLE GIANT TRAY WASHER

Don't Replace *Good* Broken Elements

TRADE MARK MEND-IT SLEEVE REPAIRS BROKEN COILS

More than 1000 power companies and dealers have cut their servicing costs on ranges and appliances—MEND-IT Sleeves restore *full efficiency* to burned-out open coil elements. Instant repair and saving on elements will increase demand for electrical appliances. Easily applied with diagonal pliers. Mend-It Sleeves in lots of 100 or less . . . 5 cents each; 200-900 per C . . . $3.50; 1000 . . . $30.

MEND-IT SLEEVE MFG. CO.,
32 Moss Avenue, Oakland, Calif., or through your wholesaler.

Save With

MEND-IT

Repair Sleeve

About Folks in the

Selling Game

Ruffin Named San Diego Electric Club President

Roger S. Ruffin, popular easement agent for the San Diego Consolidated Gas & Electric Co., was elected president over a field of seven candidates for the Electric Club of San Diego at its annual meeting not long ago. Other officers, named in the order of the votes polled to high positions, were J. F. Munro, General Electric Supply Co., first vice-president; H. G. Dillin, San Diego Consolidated Gas & Electric Co., second vice-president. To the board of directors George T. Bauder, distributor for the General Electric refrigerator in San Diego, W. M. Boyce, Mayer & Boyce, contractor-dealers, W. C. Gill, Gill Electric Co., contractor-dealers, E. W. Meise, superintendent of merchandising, San Diego Consolidated Gas & Electric Co. and R. T. Redfield, Coast Electric Co., were named. Mr. Meise was president last year.

C. M. Allen was elected secretary-treasurer over R. A. Watts, both of whom are with the San Diego Consolidated Gas & Electric Co. Mr. Allen has previously been secretary-treasurer of the organization.

▼

¶**Ralph H. Flynn,** for three years news editor of **Electrical West** and later a member of the sales organization of the Pacific Gas and Electric Co. in the San Joaquin division, has joined the advertising department of the San Joaquin Light & Power Corp. at Fresno.

▼

¶**Walter Carlson,** of the Incandescent Lamp Department of General Electric Co., San Francisco, was the feature speaker at the Marvelous Marin Electrical Development League meeting last month. He spoke on lighting developments and light measuring instruments with demonstrations of equipment. The P. G. and E. dealer cooperative plans for the year were outlined by sales representatives from that company. It was announced that Sausalito, Calif., had adopted the standard ordinance of the Pacific Coast Electrical Bureau and that San Anselmo City Council was now considering a similar ordinance. Harvey Smith, chief electrician of San Quentin prison, is president of the league.

▼

¶**John B. Hodgkins,** of the Sacramento division, was winner of the 1933 R. E. Fisher contest for dealer sales promotion representatives in the Pacific Gas and Electric Co. Mr. Hodgkins is salesman in the Sacramento division.

¶**Louis Singleton,** who has had charge of the electric range department for Dresslar Hardware stores during the past four years, is now manager of the electric range and dishwasher department for Listenwalter & Gough in Los Angeles. During the time he was with the hardware concern, Mr. Singleton sold over $50,000 worth of large stoves to movie stars, according to William P. Swartz, Pacific Coast sales manager of Standard electric ranges.

▼

¶**R. W. Turnbull,** assistant appliance sales manager of the Merchandise Department, General Electric Co., contended that the market for small appliances in the homes of America exceeds $3 million in a recent talk before the National Retail Dry Goods Association in New York City. He cited a replacement market for $75,000,000 of automatic light-weight flatirons, notwithstanding the fact that the country shows a saturation of more than 98 per cent on electric irons.

▼

Fred W. Rea, for the past 23 years engaged in advertising and sales promotion work in the General Electric and subsidiary organizations, has announced his entry into the advertising agency field with offices at 165 Post St., San Francisco. Mr. Rea has had diversified experience in marketing as well as merchandising and advertising, having had the problem for years of localizing the company's national advertising for all Western states, as well as the preparation of the local newspaper, billboard, radio and direct mail copy and promoting the advertising to dealers and the large sales organizations on the Pacific slope.

¶**Percy Pascoe,** for several years connected with the Wesix, Inc., first in the factory and later in the field as sales representative, not long ago joined William L. Kenyon and together they now operate the electrical department of the Guerneville Hardware Co., at Guerneville, Calif. In addition to electric wiring and installations of various kinds, they manufacture very ingenious and appropriate lighting fixtures for installation in the summer cabins that abound in the Russian River region, giving to these fixtures the rustic quality which is fitting to that territory.

▼

¶**Dr. G. W. Allison,** director of the Refrigeration Bureau of the Edison Electric Institute, has just completed a tour of the Pacific Coast, during which he discussed plans of the bureau for the first half of 1934 with local refrigeration organizations. According to Dr. Allison, 1934 promises to outstrip last year in refrigerator sales.

▼

¶**S. H. (Harry) Cliff** has been added to the sales organization of Manning-Bowman & Co. in the southern California territory, according to George Watson, Pacific Coast manager. Mr. Cliff was formerly assistant sales manager of the Church Hardware Co., Denver.

▼

¶**S. A. Collins** has replaced A. B. Carlins has been witsh Stubbs Electric for six years and recently has been in charge of the store.

▼

¶**Gordon Wilkins,** sales director, Mary Dowd Reardon Studios, Ltd., Oakland, has announced that organization as representatives in northern California for the Hill-Shaw Co., Chicago, manufacturers of glass coffee brewers.

▼ ▼

North and South United

FOR the first time in its history the Leo J. Meyberg Co. recently held a sales meeting of its entire Los Angeles and San Francisco staffs in the San Francisco office. Al Meyer, president, presided over the meeting of 36 factory representatives of the radio and record division of R.C.A.-Victor and for Norge refrigerator and the new Aerolator air-conditioning unit. The picture shows the meeting. In the front row are Herbert Zenker (center), Los Angeles manager, and M. G. Sues (extreme right), San Francisco sales manager. The usual dealer meeting to discuss the refrigerator year was this year combined with the Market Week of the San Francisco Furniture Exchange and brought to it a large attendance of responsible dealers throughout the West. This provided an unusually effective medium for presenting their lines to dealers.

Barton Corp., of West Bend, Wis., manufacturers of household washers and ironers, has announced the opening of warehouses in San Francisco and Los Angeles and the establishment of a permanent exhibit of products in the Wholesale Furniture Building, Los Angeles. The general upturn of business and the increasing importance of the Pacific Coast as an outlet for home appliances is the reason attributed for this move by A. H. Labisky, president of the company.

▼

Chanslor & Lyon Stores, Inc., San Francisco, placed an order for 38 carloads of Crosley electric refrigerators during March, according to P. H. Lyon, president and general manager. According to Mr. Lyon, the territory in which this company distributes the Crosley line will absorb 4,000 Crosley refrigerators during 1934.

▼

New sales rooms and offices and greater floor display space are being occupied by the Leo J. Meyberg Co. in Los Angeles. Moving from 1022 South Wall St., to 335 West Washington Blvd., the firm enters a new district which is becoming more important as a retail sales center. The company wholesales and distributes radio, refrigeration and electrical appliances.

▼

Winsted Hardware Mfg. Co., Winsted, Conn., manufacturers of hot-plates, irons and sandwich toasters, has announced the appointment of Mary Dowd Reardon Studios, Ltd., Oakland, Calif., as its agent in the eleven Western states. Sales on this company's products will be made exclusively through wholesalers.

▼

Electric Supply Co., Oakland, has moved into a new building at Twelfth and Fallon Sts. E. M. Watkins, who operates the company reports that the move was made necessary by increasing demands for appliances and equipment, particularly in the radio field.

▼

Brown & Weber Electrical Co., formerly located at 32 East Main St., Alhambra, Calif., has moved into a new and larger store at 119 East Main St. The new location has 3,000 sq.ft. of display space, permitting appliances to be displayed in groups.

▼

Fidelity Electric Co. recently moved from 1836 South Mansfield to 1569 West Washington, Palm Station, Los Angeles.

▼

Pardee Electric Co. recently moved three doors up the street from 110 South Market to 123 South Market, Inglewood, Calif.

▼

The Alladin Lamp Shop, of which R. A. Pinkerton is proprietor, recently moved from 2675 Nina St. to 43-D North Roosevelt, Pasadena.

▼

Butler's Electric Specialty Co. moved not long ago from 2321 West San Carlos to 190 Race St., San Jose, Calif.

New Lines *You Can Sell*

Hotpoint Range

Edison General Electric Appliance Co., Inc., Chicago, Ill., announces a new addition to the Hotpoint automatic electric range line, which has been styled for the modern all-electric kitchen. The new model is finished in white or cameo ivory porcelain enamel with stainless porcelain enamel cooking top and working surface. It is mounted on a black baked enamel steel base that is set back to provide toe space. The oven is placed to the right of the cooking surface and is equipped with sliding shelves. In addition to a warming compartment, the range has two utility drawers. Time and temperature control are automatic.—Electrical West, April, 1934.

▼

Servel Air-Conditioner

Servel, Inc., New York City, has added a new design in a self-contained type of room cooling unit to its line of air conditioning and commercial refrigerating equipment. The new unit is semi-portable. It is designed for summer use only, being equipped to cool, dehumidify and circulate the air. Refrigerating capacity is approximately 1 ton. Requirements for installation are an electrical connection for the 1-hp. motor and water and drain connections for the machine unit. Servel's line of air-conditioning equipment also includes a floor-type conditioner for all-year-round use equipped for remote installation.—Electrical West, April, 1934.

▼

New Royal Cleaner

The P. A. Geier Co., Cleveland, Ohio, has announced a new "De Luxe Royal" cleaner involving the following features: Electric light to insure efficient cleaning in dark places; tilting mechanism for convenient cleaning of small rugs; wide hinged-opening dust bag easily emptied; powerful suction and motor-driven brush; automatic oiling; and easy method of attaching cleaning tools. The intended retail price is $44.50.—Electrical West, April, 1934.

▼

New Easy Ironers

Easy Washing Machine Corp., Syracuse, N.Y,. has placed on the market two new ironers known as Models 60 and 61. Model 61 is equipped with a swinging table top and Model 60 is identical except for the table top. Both are finished in three tones of green porcelain enamel. Both models incorporate several new features.—Electrical West, April, 1934.

▼

Universal Mixer

Landers, Frary & Clark, New Britain, Conn., has placed on the market a new "Universal" electric mixer-beater with a fruit juice attachment. The mixer is equipped with two unbreakable porcelain enameled bowls and chromium beaters. Color is ivory with green decorations. Retail price is $19.50.—Electrical West, April, 1934.

New G-E Refrigerators

The Specialty Appliance Sales Department, General Electric Co., Cleveland, Ohio, announces the addition of new deluxe models in both the monitor top and flat top types to its line of refrigerators. The new models were designed by Henry Dreyfuss. The new monitor top refriegerator has a newly designed top with smooth walls. The temperature control has been moved from the top front of the cabinet to the center of the unit. Float valve and starting relay have been moved to the back. The flat top model comprises a modernistic design with a steel strip finished in black covering the 4-in. cabinet legs. Both models are equipped with foot pedal door openers. The monitor top model has a 7-cu.ft. capacity and the flat top model 5.3 cu.ft.—Electrical West, April, 1934.

▼

Electric Clocks

The Warren Telechron Co., Ashland, Mass., announces two new models of self-starting electric clocks. The "Signalette" is an attractive easel model alarm clock with a 4½-in. dial. It is available with the frame and supports in either gold or chrome finish. The "Minitman" has a drum-type dial similar to that in the Telechron "Minitmaster." The case is brown mahogany with satinwood ornamental front and top panels. Both models retail at $9.95.—Electrical West, April, 1934.

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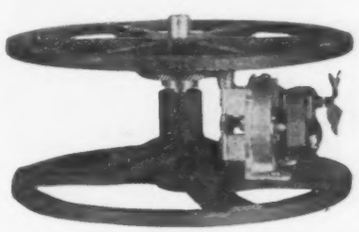


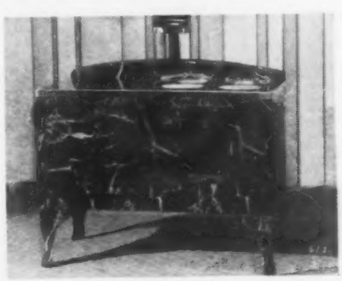
Display Turn-Table

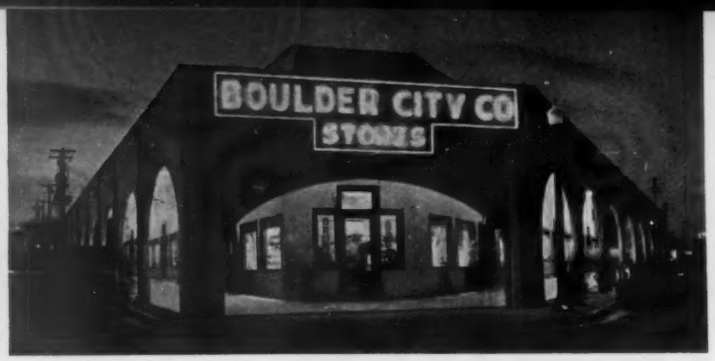
The Merkle-Korff Gear Co., Chicago, Ill., manufacturers of the "Flexo-Action" line of revolving mechanisms, commonly known as advertising turn-tables, have added to their line a new unit developed primarily for such applications as electric refrigerators, washing machines and other household appliances, the bulk of which constitute a heavy load. This unit is recommended for balanced loads up to 500 lb. and lends itself to a variety of unique display programs.—Electrical West, April, 1934.

▼

Standard Marble Range

Standard Electric Stove Co., Toledo, Ohio, has announced a new model 'Toledoan" range finished in black with ivory marble veins. The cooking top is finished in either black or Monel metal, there being a slight extra charge for this latter finish. The range also may be equipped with the range light.—Electrical West, April, 1934.





SIGN—*Brilliant island in the desert darkness is Boulder City, whose stores are illuminated to metropolitan standards with electricity brought by Southern Sierras lines*

EASY—*"Little" Bennie Walker finds it easy to tease Helen Webster, while she demonstrates the new washer by radio in the Easy Company's Pacific Coast broadcast advertising*

The Month • Commercial and Sales--

SELLS—*Roger Brigham of F. C. Nash & Co., Pasadena, dealers, brings the floor sample to the prospect by truck, drives into the driveway and has the housewife step out to the truck for a demonstration. It has helped him open many a door and made many a Westinghouse refrigerator sale*

STARS — *Movie comedians Harry Langdon and Vernon Dult cavort their best when backed up by an electric kitchen and a Standard range, in a recent Hollywood release*

HELPER—*Husbands are brazenly reminded of a household lifesaver for spring cleaning in the cooperative vacuum cleaner campaign of the Electric Appliance Society just closing*

in Pictures • • Engineering and Construction

DESERT—(*above*) *Last stand camp in the Whipple Mts. for crews building construction power lines for the Metropolitan Water District aqueduct. Heat, sand, and rock are the sole characteristics of the country which these lines traverse; (right) in the shade of the old apple (?) tree—at least this is the most shade that Harry Walker's line crews found along the route of the construction power lines the H. H. Walker Co., of Los Angeles, built for MDW*

OCEAN — *Up from 40 ft. below the waters of San Francisco Bay this diver has been preparing the seal of a caisson for another pier of the S.F.-Oakland bridge. Standing is Charlie Nourse, head man in the electrical gang of Bridge Builders, Inc., who is responsible for the satisfactory operation of everything electrical on the job from the diver's telephone set to the big electric cranes*

DISPLAY—*Standardizing upon brilliant downward illumination for the merchandise on display, the Safeway Stores have stuck consistently to Holophane prismatic glassware, as this new store in West Portal, San Francisco, shows*

OFFICE—*Practicing what its lighting salesmen preach, the Southern California Edison Co. Ltd., uses built-in lighting to get the artistic and decorative effects shown in this view of one of its district offices. Both attractive and pleasing, the installation also provides the adequate degree of lighting intensities necessary to eliminate eye strain*

Engineering of the Month

Insulator Testing Pays Dividends

This Article Describes the Operating Experience of the Puget Sound Power & Light Company in Live-line Insulator Testing on 55-Kv. Wood Pole Lines. Vacuum Tube Voltmeter Aids in Discovery of Faulty Insulators

By E. L. White
Puget Sound Power & Light Company

AT one time or another, practically all of the well known kinds of insulator test devices have been used on the lines of the Puget Sound Power and Light Co. These methods include the megger test, "ringing out," telephone test, buzz stick (or Johnston test), calibrated sphere-gap (or Doble test), and vacuum tube voltmeter (or Iler test). The company's lines are built with wood poles almost exclusively and all testing prior to 1914 was done with the megger or "ringing out" method. These methods proved unsatisfactory, chiefly because of the necessity for making actual contacts with faults in order to obtain reliable megger readings.

In 1914, following a disastrous season of pole top fires and insulator failures, the telephone test was devised and put into use. This test is made in wet weather by shunting a portion of the pole with a high impedance headset and judging the condition of the insulators by the character of the audible signal in the headset. Later experence, has shown that while all the defective insulators on a line cannot be weeded out with the telephone test, the worst cases are located and eliminated. The personal equation is also a big factor in the effectiveness of this method. In spite of these defect the telephone test was considered the best method at that time and its use was justified by the marked decrease in pole top fires and interruptions to service.

Several years later it was felt that further improvements should be made in insulator testing, and in 1927 the calibrated sphere-gap type of instrument was contracted for and put in use. This instrument consists of a small enclosed sphere-gap equipped with micrometer adjustment, a special watch case receiver connected to one electrode of the gap, a hollow wooden handle about ten feet long whose upper end adjoins the diaphragm of the receiver, and a pair of hollow ear pieces connected by a hollow rubber hose to the bottom end of the ten-ft. handle. With the sphere-gap properly adjusted, defective inslulators are indicated by a discharge across the gap when the free side of the gap contacts the cement under the first petticoat. This discharge produces an audible noise in the receiver which is transmitted to the ears via the hollow handle, rubber tube, and ear pieces.

The above instrument tests only the top petticoat of each insulator, but it was found that the number of outages and pole top fires was reduced on the lines tested. This method was comparatively expensive because of license costs and the fact that each insulator on every pole must be tested. Testing with the telephone sets was therefore continued on the lines for which the new instruments were licensed, with the intention of using the latter only on poles which tested "bad" with the telephone test. On lines not included in the license agreement, the telephone test only was used as before.

The fact that pole top fires and insulator failures occurred even after testing with the sphere-gap instrument raised questions as to its effectiveness and accuracy. These doubts were further strengthened by the fact that certain poles persistently tested "bad" in wet weather and just as consistently tested "good" with the new instrument. Comparative tests on a group of the above poles using the calibrated sphere gap instrument and a borrowed model of the vacuum tube voltmeter type confirmed the doubts of the former instrument. These tests were all made on the same day within a few minutes of each other, and all insulators were then removed and given a high voltage test. Table I shows only the insulators testing bad or doubtful.

On the strength of the above tests, instruments of the vacuum tube type were purchased outright and rebuilt in order to lessen the hazard to the operator. These were put in service in 1931. All poles which had tested bad with the telephone test were checked with the new vacuum tube instrument and dozens of defective insulators were located and removed from the lines. The percentage of accuracy also increased with experience, and the condition of center and bottom petticoats could be checked as well as the condition of the top one.

The original vacuum tube instrument operates on the same principle as the sphere-gap device except that potential indications are given by a d.c. meter in the plate circuit of a "free grid" vacuum tube voltmeter. Meter readings are taken with the "free grid" contact touching consecutive layers of cement or pieces of hardware in each insulator. The insulator's condition is then judged by an interpretation of the meter readings based on experience and laboratory tests.

The first year of the new vacuum tube device was used (1931) a 50 per cent reduction in pole top fires was recorded. An intensive program of testing was begun in 1932, but it was delayed by defects which appeared in the new vacuum tube instruments.

Table I—Comparison of Insulator Test Methods

Pole	Insulator	Sphere Gap Test	Vac. Tube Test	Laboratory Test Top Petticoat Only
P1234	2	Bad	Doubtful	OK
	3	Bad	Doubtful	OK
P1252	1	Bad	Bad	Punctured 20-kv.
	3	OK	Doubtful	Punctured 15-kv.
P1254	1	OK	Bad	Punctured 17-kv.
	2	OK	Doubtful	OK
P1265	2	OK	Doubtful	Punctured 21-kv.
P1269	3	OK	Doubtful	Punctured 28-kv.
P1276	2	OK	Bad	Punctured 15-kv.
P1306	1	OK	Bad	Punctured 15-kv.
	2	OK	Bad	Punctured 28-kv.
P1340	1	OK	Doubtful	OK
	2	OK	Bad	Punctured 15-kv.
	3	OK	Doubtful	OK
L1216	2	OK	Bad	Punctured 55-kv.
	3	OK	Bad	Punctured 45-kv.

Summary

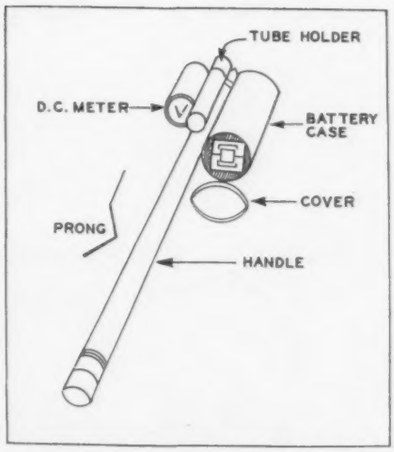
Sphere gap test	(27 insulators tested)	% Correct Tests	% Incorrect Tests
Vacuum tube	(27 insulators tested)	55.6	44.4
		81.5	18.5

Briefly these defects were as follows:

1. Very few vacuum tubes of the type used were satisfactory for insulator testing.
2. The type of tube used is obsolete, hard to procure, relatively insensitive, and somewhat fragile.
3. When contacting potentials higher than 20 kv., static discharges took place inside the tube causing the meter to fluctuate, and eventually burning out the tube.
4. Static discharges occurred between unbonded metal parts in the meter, causing it to fluctuate, and in some cases, burning hair springs in two.
5. No two instruments gave the same readings, especially at low potentials.
6. The instruments did not read zero at zero potential.

In order to overcome the defects in the original instrument a new circuit was developed. This circuit uses a later type of vacuum tube and has none of the above defects. The testing instruments, which had been rebuilt in 1931 to provide greater safety for the operator were again remodeled to take advantage of the new circuit. The testing program was resumed and, in 1933 was continued with results as shown later in Table II. The new instrument proved even more reliable than its predecessor, and the following facts became evident as soon as the test data made with the new circuit were examined:

1. About 50 per cent of the poles testing "bad" with the telephone test prove to have one or more defective insulators.



Vacuum tube voltmeter used by the Puget Sound Power & Light Co. has proven highly satisfactory in locating defective insulators and preventing pole-top fires. In use the prong contacts between cement under each petticoat of the insulator and the line. Meter indications are recorded by the groundman

Table II Pole Top Fires (1926-1933)

Year	Aug.	Sept.	Oct.	Total
1926	38	8	8	54
1927	30	8	8	46
1928	19	37	14	70
1929	16	16	6	37
1930	7	30	10	47
1931	12	2	5	19
1932	3	9	6	18(11)
1933	4	0	1	5

2. An alarming number of very bad insulators are not indicated by the telephone test.
3. A very large percentage of old four-piece insulators test "good," a small percentage test "bad," and a still smaller number may be classified as "doubtful."
4. Three-piece insulators of recent design test "good" with a very few exceptions.
5. Cracked petticoats do not always test "bad" unless the crack has progressed to the tie wire, or the insulator surface is dirty or slightly moist.
6. Abnormal readings frequently occur which indicate abnormal potential distribution due to dirt or petticoat failures.

The past year and a half of operation with the improved vacuum tube instrument have proven its value in the elimination of poletop fires with their attendant hazards, costly interruptions, and damage to other equipment. Table II, is conclusive proof that an adequate insulator testing program will produce results. (Three months only are given because 75 per cent of the yearly totals occur in those months.)

In connection with the above table, the total for 1932 would have been 11 fires instead of 18 if the testing program had not been delayed in that year. Of the five fires recorded for 1933, 3 were caused by insulators which had not been tested, one was caused by insulators which later tested without failure in the laboratory, and one was caused by a badly broken insulator, which had been reported but not yet changed. In conclusion it should be mentioned that the lines tested with the vacuum tube instrument stood up without a single pole top fire during the rain and wind storms which swept the entire Pacific Coast Region in December and January.

▼ ▼ ▼

Wire Puller Is Boon To Line Crews

Something new in labor-saving devices for the line crew is the "Milo Wire-puller." a compact light-weight device for stringing wire, guys or cables invented by Milo Tupper of the transmission department of the Southern California Edison Co. Ltd. Principle features are the high tensions which are possible and a continuous action which makes it unnecessary to tie off and reset the device for another pull. Simple lever action and light weight prove especially helpful to patrolmen and trouble men who are obliged to work alone.

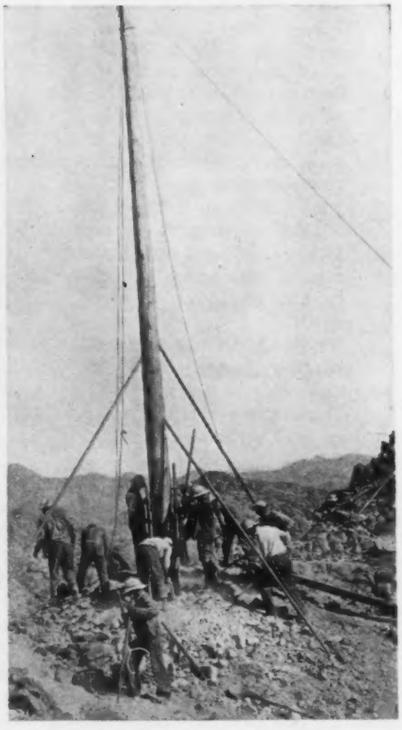
Jaws of the device are so arranged that they will slip over the wire or cable so that it is unnecessary to have a dead-end to thread through the wire puller, a feature which saves time in tightening up circuits or guy wires already in position. The puller has been developed in three sizes with a capacity in pounds pull, ranging from 1,500 to 4,000 and a pulling ratio ranging from 10 to 1 to 24 to 1. Incidental uses for the device include pulling trucks out of sand or mud holes and lifting poles. For hot line work the wire pullers are furnished with canvas bakelite side members and levers.

Guy-puller in action. At the left an overhead circuit is being strung. Note the slack between the jaws enabling a circuit to be cut and spliced without a jumper. (right) Close-up of the lever system working on a guy-wire

Meeting the Desert's Challenge . . . .

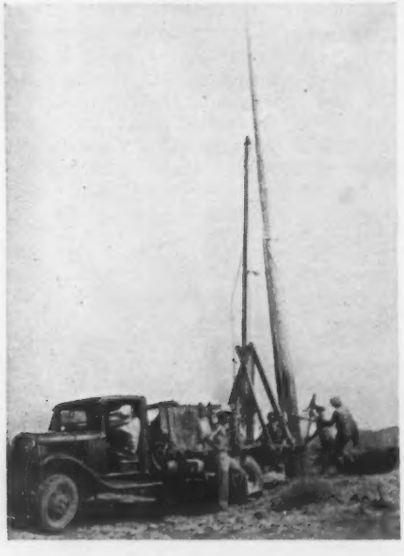
ROUGH GOING.—*like this with no roads spells punishment to men and equipment working in 120° F. temperatures*

EXPLOSION—*marks the spot where a pole hole is being made in the rocky soil. A large percentage of the holes had to be blasted out of (or is it into) the desert, not all of which is sand*



HAND WORK—*this rocky ledge defied everything but a mountain goat. Tools had to be packed up by hand and, now that the job is finished, will be packed down and up the next ridge. What a life!*

MECHANICAL AID—*pole-setting with a Ford truck equipped with a power winch and a boom improvised from two cross-arms spliced together. Brains and brawn prove a good combination in combating desert difficulties*



Seldom has a contractor encountered more difficulties than those natural obstacles provided by the desert of southeastern California in the construction of these 200-odd miles of construction power lines for the Metropolitan Water District's aqueduct from the Colorado River. The line traversed every type of country except a swamp.

The contract called for the erection of 38 miles of 66-kv., 131 miles of 33-kv., and 27 miles of 33-kv. taps to substations along the route where large blocks of power were needed.

The lines were constructed largely in the rock and sand, characteristic of this extremely rough, desolate region, during the five-month period from May to October when temperatures ranged up to a 130° F. and averaged for a two-week period over 120°.

Good food, camp comfort and sanitation, and close attention to health kept the 63-man crew at maximum efficiency.

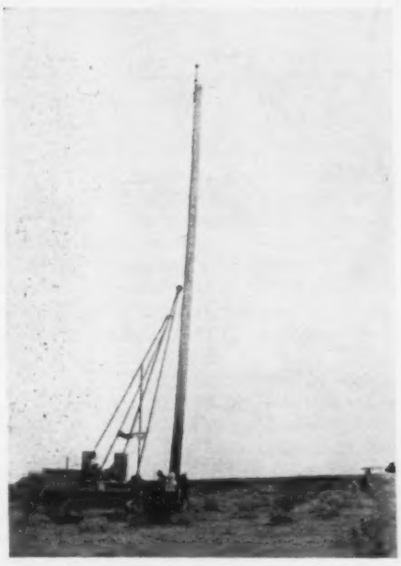
ROBOT DRILLER — *Some of the pole holes were drilled with this machine. This hole proved so tough that the equipment broke down. And it's 20 more miles to the river!*

(*Left*) ALL HANDS—*plus an "extra low" low gear on the truck are required to get this truck into a position to raise the poles on a rocky spur. And try and find some shade!*

A Pictorial Record of the Difficulties Surmounted in Supplying Construction Power for the M. W. D. Aqueduct

By H. H. Walker
H. H. Walker, Inc., Los Angeles

WIRE LAYER—*consisting of three cable reels mounted on two-wheeled truck dollies and hauled in tandem by the "cat."*

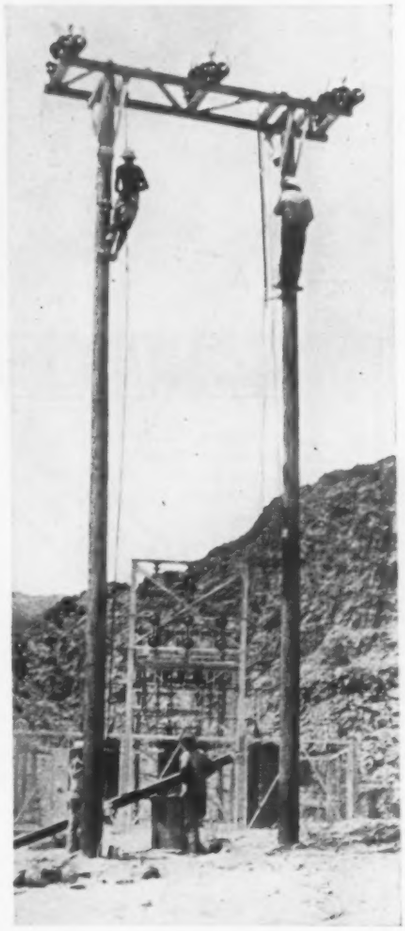


VERSATILE "CAT"—*equipped with a power winch and boom makes pole setting a lot easier than hand piking. The tractors can get in and out of a lot of tough spots*

STATISTICS

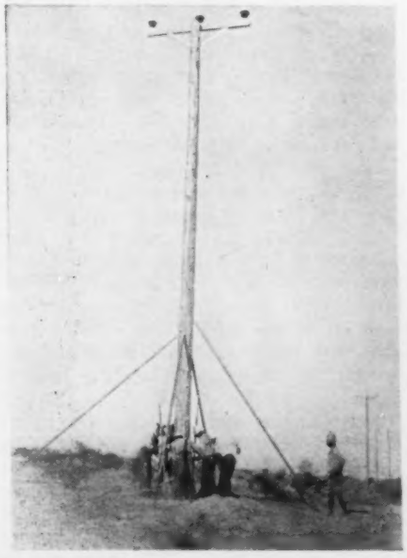
Erected were:
- **1,397 1-pole structures**
- **1,014 2-pole structures**
- **53 3-pole structures**
- **4 4-pole structures**

Cedar poles used throughout
Average pole length, 45 ft.
Maximum pole length, 55 ft.
Total copper used, 3,804,825 lb.
Total number of guys, 1433
Number of guy anchors, 973
Lineal feet of holes dug for poles and guys, 28,712
Av. length of 66-kv. span, 533 ft.
Av. length of 33-kv. span, 395 ft.
Longest span (33-kv.), 2,165 ft.
Copper for 33-kv. line, 2/0
Copper for 66-kv. line, 4/0
Copper for 33-kv. taps, No. 2
7-strand copper conductor used throughout.

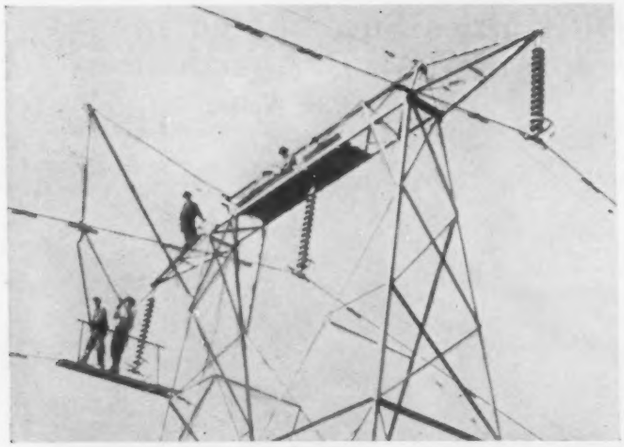


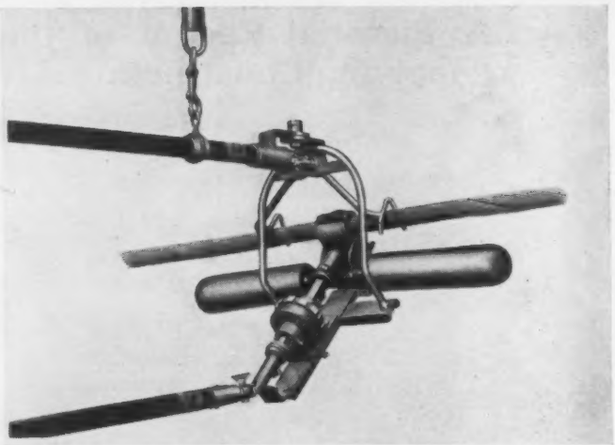
SUBSTATION TAP—two linemen finishing a structure mounting three pole-top switches which feed the substation from which 2.2-kv. power is obtained for boring the eastern half of the tunnel through the Coxcomb Mountains

(*Left*) EASY GOING—*That is comparatively speaking. The crew tamps in a 33-kv. pole while the boss (and author) looks on and figures how much money might be lost on a job like this*



(*Below*) HEAVE HO!—*and up they go. It's not as easy as that but hand piking was necessary in many cases. Believe it or not the crew is 100 per cent Caucasian*





(Left) Set-up for removing and installing dampers from a "hot" 220-kv. line

(Right) Close-up view of the tool showing an 18-lb. damper being applied

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220-Kv. Line Worked "Hot"

RECENT operations on the Southern California Edison Co. Ltd. system indicate that high voltage is no deterrent in working transmission lines "hot." This company installed and replaced Stockbridge vibration dampers on a 220-kv. line without removing the circuits from service, using for the job, equipment devised and patented by C. C. Coon, of the Safety Live Line Tool Co., at Oakland, Calif.

In working these 220-kv. lines "hot," it was necessary to have equipment that would handle dampers weighing from 12 to 20 lb. and place them on the conductors from 4 to 20 ft. from the point of the conductor support. A 20-ft. boom with a sliding attachment for the pulley block used, the boom being made in two sections and fitted with a sleeve coupling for convenience in transportation.

A tool for removing the old style damper was developed some years ago and is now in quite common use. Because the clamp of the improved damper is different in design from the old style, a new tool was developed that will both install and remove all sizes of the new type Stockbridge damper manufactured by the Aluminum Co. of America. This tool has a clutch device whereby the damper clamp bolt is screwed in at high speed until the bolt starts to take tension when the clutch automatically engages a four-to-one gear set, allowing the clamp to be set tight with one-fourth of the torsion strain on the stick that would otherwise be required. The tools are operated by means of the two treated handles, one for guilding the damper on to the line and the other for tightening the clamp bolt, from a platform 14 in. wide by 10 ft. long attached at the inner end of the horizontal tower member by two fittings which straddle the member and are locked in place by wedge-shaped pins. The outer end is

supported by a set of 4-in. blocks attached to the cross arm. A safety rail is provided on the platform.

A crew of four men was found to be most efficient, the time required to rig up, replace the damper on each side of the insulator support on three conductors and remove the rigging being approximately 1½ hours. To replace a single damper on one conductor would require about one-half hour including the time to set up and remove the rigging. To date 124 dampers have been replaced at various locations with less hazard than the old method of riding the conductor and without the necessity of removing the line from service.

▼

Surveys Completed for 220-Kv. Acqueduct Line

Surveys for the 220,000-volt transmission system which will supply Bouler Dam power to the acqueduct pumping plants of the Metropolitan Water District of Southern California have practically been completed and field crews have begun to spot actual tower locations. The completed system will comprise approximately 400 circuit miles of line.

Route selected for the line parallels the Colorado River for 84 miles to a point near Goffs, Calif., where the line divides, one circuit extending southeastward 59 miles to the acqueduct intake at Parker Dam, and the other southwestward 50 miles to the Iron Mountain pumping station. Both sections then parallel the line of the acqueduct.

Most difficult section of the line to locate was that section through the Whipple Mountains west of Parker, where over 100 square miles were mapped by means of aerial surveys. The field work on the location of the line has been under the direction of J. B. Bond, construction engineer, with R. N. Allen as engineer in charge of locations and surveys and V. D. Elliott as assistant engineer.

▼

Floolighting Construction

Night construction work on the San Gabriel Dam No. 1, an $8,000,000 project being built for the Flood Control Bureau of Los Angeles County, has been facilitated through the use of portable chromium-plated floodlights on specially designed tripods. These lights, designed by Westinghouse engineers, can be carried by one man and placed exactly where needed, the tripod easily adapting itself to any kind of grade.

Sausalito Adopts Standard Code

The city council of Sausalito, Calif., announced that it had adopted the Standard Electrical Ordinance of the Pacific Coast Electrical Bureau on February 27 and that the ordinance will go into effect March 20. Two weeks before, Frank Kiefer, representative of the Bureau, appeared before the council and explained the ordinance and the reasons why it was being widely adopted by other towns and cities of the state. It is believed that this is a record for speed in adopting sound legislation— presentation, adoption and enforcement all within a month.

¶Because of the success of the excursion to the Boulder Canyon project last December, San Francisco engineers are planning a second excursion to that project which is scheduled to leave San Francisco at 7:40 a.m., Friday, April 6. The schedule has been worked out to permit two full days, April 7 and 8, on the project. Pullmans assigned for the excursion will remain at Las Vegas, Nev., and provide sleeping accommodations each night, while special buses will carry the party to all points of interest. Cost of the excursion is $32, which includes roundtrip bus, railroad and Pullman fare. Arrangements for the trip are under the direction of H. W. Crozier, consulting engineer of San Francisco.

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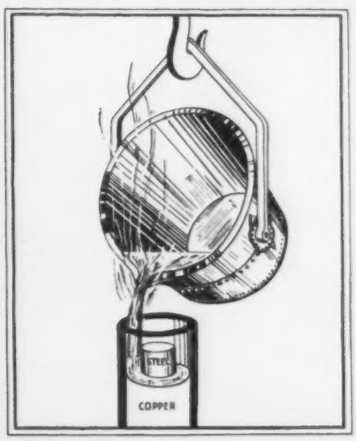

NON RUSTING—Guy Strand, Messenger Strand, Overhead Ground Wire., Line Wire, Telephone Wire, Composite Conductors, Ground Rods, Etc., Made by the World's Largest Manufacturers of High Grade Steels.

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Underground Transmission

Without Conduit

Note the air and moisture proof flexible coverings. Sealtite represents a distinct advance in parkway cable construction. It is more pliable than any other underground cable . . . and costs are considerably lower.

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GLASS INSULATORS

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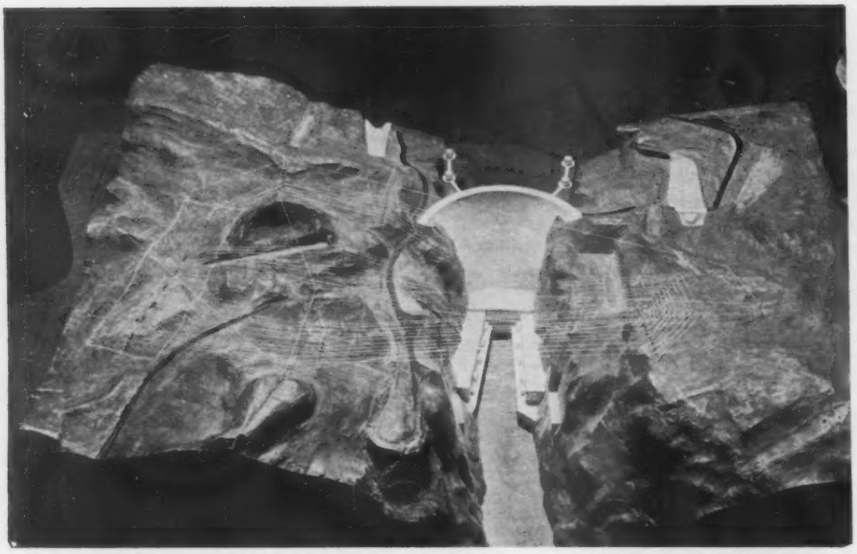
Models Aid Boulder Dam Study

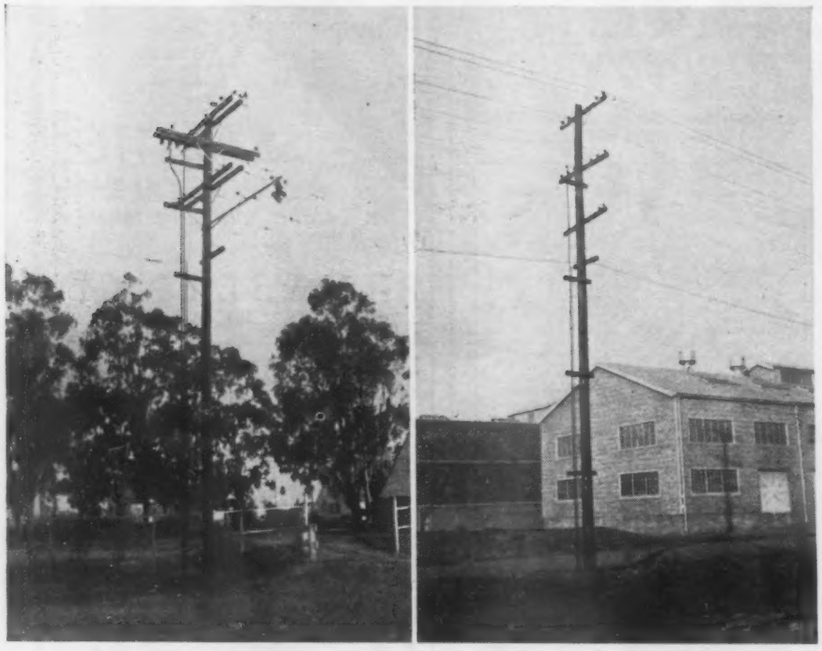


TO study ways and means of bringing power circuits from the power plant at Boulder Dam to the huge switching station atop the canyon, this 100-ft.-to-the-inch model of Boulder Dam and the surrounding territory was constructed by the engineers of the Bureau of Reclamation.

With the model it is a simple matter to work out various plans for routing the nine circuits which will deliver electric energy to the switching stations. As the circuits are re-arranged, their locations are plotted on a typographic map drawn to the same scale as the model. This photograph was furnished by A. C. Wingo, engineer of the Los Angeles Bureau of Power and Light, who is representing the bureau in the reclamation offices at Denver, Colo.

▼ ▼

Modern Distribution



Two examples of tapping from overhead circuits which embody recent trends in distribution practice are shown above. The installation, which is on the grounds of a large Pacific Coast industrial plant, provides neatness, safety, circuit isolation and flexibility, all of which are particularly applicable for overhead systems serving isolated load centers requiring a number of different voltages where service to the load must be underground. Circuits are brought down the pole in conduit which is supported by short cross arms so that the pipe is a safe distance from the pole itself making a neat, safe installation

Books . . .

You'll Need in Your Work

PRINCIPLES OF RADIO, by Keith Henney. 491 pages, 5½x8 in. Price $3.50. John Wiley & Sons, Inc., New York.

The second edition of this text is well suited for self-instruction or class instruction. A logical expansion of the subject plus a profusion of illustrative problems make for easy understanding and facilitate the student's progress. The material in the first edition has been revised and brought down to date. The most recent developments in tubes, circuits and design practice, as well as data on television and facsimile reproduction are included.

▼

THE ELECTROMAGNETIC FIELD, by H. F. Briggs, demonstrator in physics, Oxford University. 158 pages; 8¾x5¾ in.; price $3.50, Oxford University Press, New York City, N.Y.

This text on the electromagnetic field is intended for advanced students in physics. In the development of the subject of the author leans toward geometry rather than algebra in mathematics and expands the treatment to include the relation of the electromagnetic field to the special relativity theory.

▼

RADIO ENGINEERING, by Frederick Emmett Terman, associate professor of electrical engineering, Stanford University. Fabricoid bound. 6x9. 688 pages. Illustrated. First edition. McGraw-Hill Book Co., Inc., New York City. $5. For sale by the McGraw-Hill Retail Room, 883 Mission St., San Francisco.

This book presents a comprehensive engineering treatment of the important vacuum tube and radio phenomena. A logical order of presentation includes the theory of tube circuits and the fundamental properties of vacuum tubes and vacuum tube applications which laid the foundations for more specialized topics, such as wave propagation, direct finding, etc. Care has been exercised by the author to subordinate the mathematical treatment of routine calculation in order to clarify the logic and value of important mathematical relations.

▼

HIGH FREQUENCY MEASUREMENTS, by August Hund. Fabricoid bound. 6x9. 491 pages. Illustrated. First edition. McGraw-Hill Book Co., Inc., New York. $5. For sale by McGraw-Hill Retail Room, 883 Mission St., San Francisco.

The principles and methods used in high frequency work are given detailed treatment in a manner suitable for student or laboratory instruction. In the first three chapters, fundamental relations and circuit properties and a description of apparatus and technique used for high frequency measurements are described in detail. Subsequent chapters are devoted to methods of accurate determination of voltage, frequencies, capacities, self-inductance and various other characteristics of electric circuits.

Motor Forum

—*An Idea Exchange*

for the Industrial Man and his practical problems, either mechanical or of policy

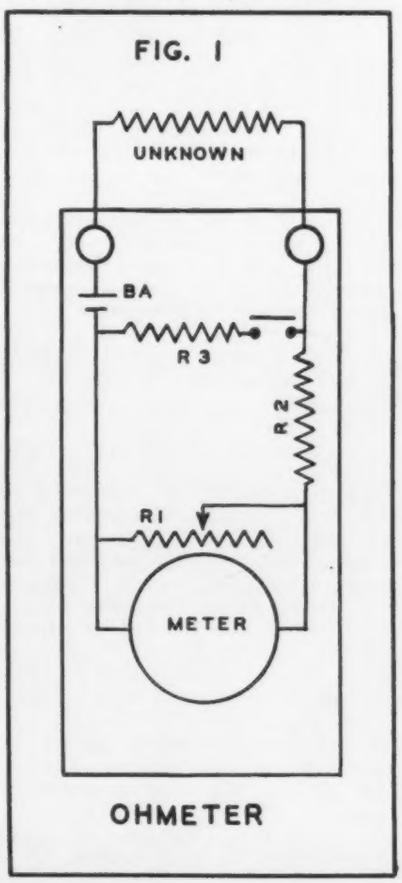
Simple Testing Devices Save Shop Costs

By H. J. REES
Westinghouse Electric & Manufacturing Co.

TWO simple testing devices which can be readily constructed in any electrical shop will be found to be of practical value in saving time and labor on electrical repair jobs, as well as eliminating the chances of error in routine measurement jobs. The most useful of these two instruments is now known as an Ohmmeter. This device consists of a fairly sensitive moving coil type of d.c. instrument, any standard millivolt meter or milliameter being suitable for the construction of such an instrument.

Fig. 1 shows the fundamental circuit of the Ohmmeter. "BA" is usually a single flashlight cell; "RI" is a 1,000-ohm rheostat or potentiometer used as a rheostat; "R2" is the necessary series resistor to obtain full scale deflection with resistance "RI" set midway of its range with the cell "BA" at 1.5 volts.

Fig. 1—Circuit diagram for "Ohmmeter"



For example, a milliameter with a 0 to 5 scale is a voltmeter with a resistance of 200 ohms per volt, and therefore the value of "R2" would be approximately 300 ohms. "R3" is a shunt which, when its circuit is closed, becomes a scale divider and, which, for convenience, is usually calibrated in the ratio of 10 to 1. Using the shunt then allows comparatively low resistances to be read with very high accuracy.

As the life of the cell "BA" increases its potential will drop, but the meter can be kept at its initial accuracy by adjustment of "RI," adding resistance in this circuit allowing full scale to be maintained on the meter. The current drain on the cell is very small and it should last for months with normal use.

The uses to which this instrument can be put are practically unlimited, but its principal function is "continuity testing" of one form or another. By "continuity testing" is implied some of the following operations:

- Testing direct current motor and generator field coils for completeness of windings
- Testing resistance to determine the similarity of the several coils that make up the field structure on the machine
- Testing of the individual coils of milti-coil armatures
- Checking coil groups in a.c. stators
- Sectionalizing windings in single phase stators
- Identifying starting or running windings in split phase motors
- Continuity of rheostats and the resistance per step
- Testing the resistance of operating coils in control apparatus
- Sorting series coils from shunt coils
- Determining sections of transformer windings
- Locating percentage taps on transformers and auto-transformers.

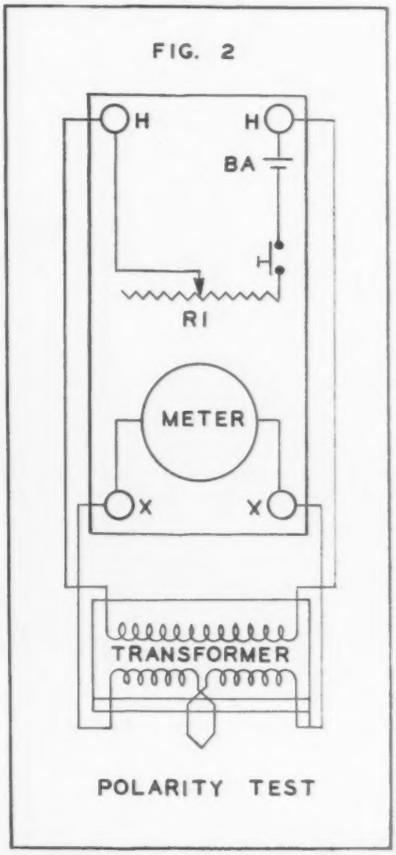
To the man in the field this instrument at once replaces the bell box, magneto and test light and every other form of similar testing device. Using this instrument, he soon realizes that it gives a more reliable answer than the other devices. Furthermore, the bell, magneto or lights can only give a signal if the circuit is complete, but the ohmmeter definitely shows whether an all-metalic circuit is being tested or whether some resistance such as an operating coil, poor contact or loose terminal connections, is included. Faults are located with ease and repairs are facilitated if such information as that supplied by the ohmmeter is available.

Another important service that this instrument performs is that of identifying control circuits. The ohmmeter makes it possible to construct a schematic diagram for any foreign controller in a very short time. This same holds true for any similar class of apparatus.

A second device, having a much more restricted field of application, is important in any repair shop where transformers are repaired in any quantity. The principal duty of this device is to eliminate the use of high voltage, and the danger that accompanies it, in making tests to determine the instantaneous polarity of transformers. While this device cannot be obtained from any instrument manufacturer in a complete unit, its several parts are easily obtained and assembled. It consists of a single flashlight cell and a 500-ohm rheostat, together with a millivolt meter, preferably one with a zero center scale. Fig. 2 shows the construction diagram. Once arranged correctly, this circuit will always indicate whether the windings under test are additive or subtractive instantly. No set-up of instruments, instrument transformers, or time-consuming safety measures, are necessary, the only requirement being that connections to the transformer be made correctly.

The operation of the device is as follows: Connections having been made as indicated, the push button is depressed and the meter will deflect in one direction or the other, depending entirely

Fig. 2—Circuit diagram for device for testing transformers

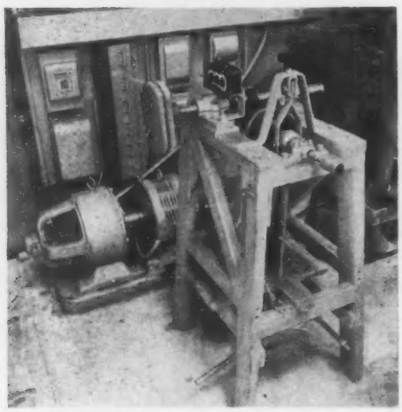


upon the polarity of the transformer. The amount of deflection can be controlled by adjustment of the rheostat "RI" and can be made as great or as small as desired. One point that is necessary to mention in the construction of this device is that all meters do not have their terminals arranged in a similar manner so that it is impossible to definitely indicate on the connection scheme the polarity of the meter terminals. Once this has been determined and checked with the usual method of testing transformer polarity, the deflection will always be to the right or left, depending upon whether the transformer is of additive or subtractive polarity. In constructing the instrument, test it with a transformer of known polarity and mark the scale accordingly. This device will soon warrant its cost in any shop where the volume of transformer business is great or small, but the saving in time and money is overshadowed by the safety features that it embodies.

The above devices have been in practical use in one large repair shop for the past two years and have been in such great demand among the shop men that several additional units have been added to the shop equipment.

▼

Direct Current Drive



Flexibility and economy in the poeration of all shop equipment for winding and repair of motors, in the shop of the North Bay Electric Works, San Rafael, is provided by means of a 5-hp., a.c. motor, driving a d.c. generator. All shop equipment is run from the d.c. The d.c. control is more flexible as to speed. A limit upon the motor load of the entire shop is likewise set and cannot be exceeded. This keeps down the power bill for the shop and promotes efficiency among the crew by operation in the machines on a more careful basis. The accompanying photograph shows the unit as assemhbled and rewound in the company's own shop. In front of it stands a winding lathe also made in this shop which has a d.c. motor drive, a cone clutch and is foot operated. A gear train operates a meter counter and wooden forms are employed for various coil patterns.

Contractors to Meet In Sacramento Apr. 7

Declared to be the most important and significant meeting in the history of the electrical contracting business on the Pacific Coast will be the convention of the National Electrical Contractors Association, Northern California Chapter, at Sacramento April 7. Invitations have been sent to contractors' organizations in Washington, Oregon, Idaho, Utah, Arizona and southern California also to attend, in order to get from Lloyd Flatland, appointed by N. R. A. as the Pacific Coast region code authority for the electrical contracting industry, who has just returned from Washington, first-hand information relative to the contracting code.

The executive committee of the national association was called together by President Mayer, of Chicago, just prior to the large code authority meeting held by General Johnson, N.R.A. administrator in Washington last month. Mr. Flatland was appointed to go in the place of F. O. Sievers, national executive committeeman, who was unable to attend. After several stormy sessions code authorities were selected and approved and a procedure begun to set up the machinery for enforcement of the National Electrical Contractors Code.

The San Francisco and Northern Chapter region is particularly fortunate, according to Mr. Flatland, in that much of the preliminary organization necessary for enforcement and utilization of the N.R.A. machinery has already been effected and has been in operation for several months. This head start has been found to place the Northern California Chapter in a more advantageous position than any other region in the country to begin the effective operation under the code. All other regions with the exception of Florida seem to have been delaying organization until the code was actually approved. Not so northern California, which has anticipated practically all of the requirements of the code in its organization form and is operating practically under the code requirements at the present time.

Charles A. Langlais, president of the San Francisco Electrical Contractors Association, Inc., has loaned to the Northern California Chapter his entire executive committee organization for the purpose of assisting other cities in the setting up of similar operation in their regions.

A number of committees have been formed, among them the code committee of which H. C. Reid is chairman; jobbers' relations committee, of which Victor Lemoge is chairman, labor relations committee, of which Charles Shipman is chairman; legislative committee, of which C. B. Kenney is chairman; data book committee, of which R. Griffin is chairman; educational committee, of which C. L. Chamblin is chairman; public relations committee, of which F. O. Sievers is chairman; administrative committee, of which Thomas Harris is chairman.

Several section groups have had appointed advisory committees also. For example, C. Severin is chairman of the fixture committee and Horace Adams is chairman of the motor section. A general committee for northern California has also been selected headed by Lloyd Flatland, San Francisco, and including Charles Langlais, San Francisco; H. H. Courtright, Fresno; R. Goold, Stockton; J. O'Connor, Sacramento, H. Eklund, San Rafael; Frank Boyd, Oakland; G Armstrong, Charles Shipman, Edward Martin and C. B. Kenney of San Francisco.

The convention will be preceded by a boat ride up the Sacramento River and M. G. Sues (extreme right), San from San Francisco, leaving Friday, April 6, at 6:30 p.m. and returning Monday morning, April 8, at 8:00 a.m. Boat arrangements are in charge of Charles H. Shipman.

The program for the convention tentatively was announced. The morning session is open to anyone in the electrical industry. The afternoon session is a closed session for contractors only.

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Baker's Bins

Bread pans, such as bakers use to bake small loaves, make excellent bins for motor and control repair parts, fittings, screws, bolts, and various accessories, North Bay Electric Works, of San Rafael, finds. The bread pan is fitted with a pipe strap for a handle, and the name of the article contained in it is painted on the end. A case has been made of plywood, with an individual compartment for each pan, thus the pan becomes a metal drawer, as shown in the accompanying illustration. The idea is inexpensive, and saves space, yet provides an efficient means of keeping stock. The pans can even be subdivided for small articles.

Practical Men » » »

¶**Prof. R. H. Dearborn,** formerly head of the department of electrical engineering, School of Engineering, Oregon State College, Corvallis, has been appointed acting dean of the School of Engineering since the resignation of former Dean H. S. Rogers last August, who left Corvallis to assume the presidency of Brooklyn Polytechnic Institute, New York.

▼

¶**L. W. Going,** chief electrical inspector of Portland, and F. D. Weber, engineer for the Oregon Insurance Rating Bureau, are working with a committee of the Northwestern Electric Co. and Portland General Electric Co. to formulate a new set of rules for electric services and meters.

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¶**James Baker Stone,** member of the firm of the Redlands, Calif., Electric Co., has been appointed postmaster of Redlands. Stone was chairman of the Democratic campaign in Redlands at the last election. He is a member of the American Legion and active in civic affairs.

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O. O. Alenderfer is always an active influence in the electrical business of Oregon. Co-proprietor and partner in the Peoples Electric Co., contractor-dealers of Medford, Ore., this company does a big contracting and merchandising business.

▼

¶**Sam Radelfinger,** electrical contractor of San Francisco, is electrical even to his fishing. At a hunting and fishing lodge to which he belongs he rigged up and ingenious device using an electric door opener, a battery and electric bell in such a way that with a line baited and set upon the pier at the water's edge, the minute a fish grabbed the bait the electric alarm in the club house brought Sam down to gather in his catch.

▼

¶**Franklyn W. Loomis** has joined the staff of Luminous Structures, Inc., 6818 Avalon Blvd., Los Angeles, to be associated with its sales division. Mr. Loomis was formerly associated with Consolidated Lamp & Glass Co., Duquense Light Co., Pittsburgh, and the Canadian General Electric Co., in Montreal and is a member of the Illuminating Engineers Society.

Skipper and Yeoman

Charles A. Langlais, new president of the San Francisco Electrical Contractors, is a seaman of note. His skippership of the contractors follows that of ruling the bridges of the following: From 1923-24 he was commodore of the Corinthian Yacht Club, San Francisco, and has been admiral of the Pacific Coast Yachting Assn. He is still representative of the North Amercian Yachting Union committee on rules. Doing the yeoman job for the association is Kenneth Ryals, Stone-Ryals Electric Co., San Francisco, and one of the pioneers in the building and development of fan type electric heaters.

▼

¶**Fixture dealers** and illuminating engineers of San Francisco met jointly March 8 at a dinner meeting for an instructional meeting on the mutually interested subject of lighting. Speakers were Leo Gianini, engineer, Incandescent Lamp Department, General Electric Co., who spoke on "The Science of Seeing." Leonard Hobbs, the Edwin F. Guth Co. related the results of the Alabama School lighting test. Harold L. Gerber, Department of Electricity, San Francisco, and chairman of the Illuminating Engineering Society, Bay Cities Chapter, spoke on "Fixture Installations, Circuit Wiring and Voltage Regulation." Other speakers were Prof. Leland H. Brown, of Stanford University lighting division and a number of the fixture dealers.

▼

¶**Clyde L. Chamblin,** well known in electrical circles in northern California, proprietor of California Electrical Construction Co., was made a director of the San Francisco Retail Merchants Assn., representing the electrical business for the year 1934 at a recent meeting. The association is active in administering and operating the retail code in that region.

▼

¶**J. T. Hill** has been appointed Southwest representative of the Wolverine Tube Co. The J. T. Hill Sales Co., of Los Angeles, will distribute the Wolverine line of electrical soldering lugs, splicing sleeves for overhead and splittinned sleeves for underground work.

▼

¶**William Wuelker,** president and manager of the Wuelker Baby White Kitten Lamp Co., makers of aluminum reflectors and lighting equipment, has announced the moving from a former location at 231 Franklin St. to 195 Fremont St. in San Francisco.

¶**O. W. Coombs,** southern California manufacturers' representative has moved his place of business from 1426 Maple Ave. to larger quarters at 123 West Eighteenth St., Los Angeles. Mr. Coombs represents Markel Electric Products, Inc., Buffalo, N.Y.; Ender Mfg. Corp., New York City; National Electric Appliance Corp., Bridgeport, Conn.; Perfection Glass Co., Star City, W. Va., and National Specialties Co., Inc., Fort Wayne, Ind.

▼

¶**F. A. Gerhardt,** Pacific Coast district sales manager of Crouse-Hinds Co., has recently returned from a trip to the company's factory at Syracuse, N.Y.

▼

¶**F. I. Lawson,** formerly of the hydroelectric and transmission department of the Pacific Gas and Electric Co., is now connected with the Braden Copper Co., at Rancagua, Chili.

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¶**Reston Electric Co.,** of which J. E. Reston is proprietor, is now located in new offices at 524 Hornby St., Vancouver, B. C. Mr. Reston was formerly located at 479 Howe St.

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¶**N. J. Macdonald,** of Thomas & Betts Co., Elizabeth, N. J., visited various cities on the Pacific Coast during February. While on the coast he attended the divisional meeting of N.E.W.A. at Del Monte.

▼

Jack Baxter (left), Portland representative, and Will Sherreffs, vice-president, of the S & M Lamp Co. get together during a recent sales conference held at headquarters in Los Angeles

▼

¶**James Land,** formerly connected with the Frank Adam Electric Co. in San Francisco, is now with the Drendell-Trumbull Electrical Mfg. Co. in its San Francisco headquarters.

▼

¶**Contract** for the installation of an ornamental lighting system for Olympic Blvd., from Rimpau Blvd. to Robertson Blvd., Los Angeles, has been awarded by the Board of Public Works to W. H. Rumble of Los Angeles, the low bidder. The price of the contract is $47,996. The specifications of William Lauer, street lighting engineer for the city, call for ninety-three posts of the single light type, with bronze lanterns.

¶Chromalox heating units and associated measuring and control devices are listed in catalog No. 34, recently completed by the Edwin L. Wiegand Co., of Pittsburgh, Pa. Included also are curves, diagrams and other data helpful in determining correct electric heating applications.

▼

¶H. B. Squires Co., of which Sam P. Russell is president, announces that it has now been appointed representative of the Frank Adam Electric Co., St. Louis, manufacturers of panel and switchboards for the northern California territory.

▼

¶The Jas. J. Noble Co., Inc., representing the Auth Electrical Specialty Co., Clifton Conduit Co., Superior Porcelain Co. and other lines has moved to new offices at 420 Potrero St., San Francisco, Calif.

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¶Wesco Co., Denver, has been appointed to handle the electrical soldering lug and splicing sleeve line in Colorado and Wyoming for the Wolverine Tube Co., of Detroit. O. P. Willoughby, of the Wesco organization, will specialize on this line.

▼

¶The Sovereign Electric Supply Co., headed by G. R. Sovereign, is located at 1052 Folsom St., San Francisco. Mr. Sovereign is well known in the electrical trade on the Pacific Coast having represented the United States Graphite Co. in this territory from 1919 to 1927 and being associated with the Marwood Co. The new concern handles a complete line of insulating materials, bearings, brushes and other electrical supplies.

▼

¶S. S. Wolfson, manager of the Warmer Electric Products Co., San Francisco, has announced the appointment of General Agencies as its representative in California, Oregon, Washington, Arizona and Nevada. General Agencies has offices in San Francisco, Los Angeles and Seattle. Through a typographical error the new soldering irons manufactured by this company described on page 43 of the March issue were attributed to the Warner Electric Products Co. instead of Warmer Electric Products Co.

▼

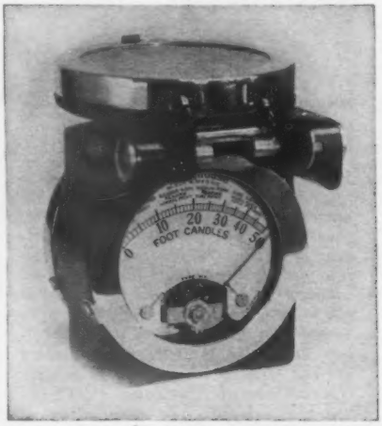
¶F.A.B. Mfg. Co., Oakland, has announced the appointment of Garland-Affolter Engineering Corp. as representative in California, Oregon, Washington and Arizona for its line of high-voltage, double-break power fuses.

▼

¶Harold E. Trent Co., Philadelphia, Pa., manufacturers of electrically heated industrial equipment, has announced the appointment of The Electric Material Co., Inc., San Francisco, as its central and northern California representative. In addition to a wide range of industrial equipment, the company manufactures various types of electric heating elements.

New Devices » » »

to Use on that Next Job



New Light Meter

Westinghouse Electric & Manufacturing Co. has placed on the market a "Right Light" meter for measuring light intensities and making illumination surveys. This new foot-candle meter uses the new Westinghouse Photox cell and a microammeter, the scale of which has 50 divisions, which is calibrated in foot-candles and is also divided into sections indicating the minimum amount of light considered satisfactory for various kinds of working conditions. The complete unit is of a convenient size so that it may be held in the hand.—Electrical West, April, 1934.

▼

Time Lag Fuses

Jefferson Electric Co., Bellwood, Ill., has placed on the market a new line of fuses known as "super-lag." These fuses incorporate a design principle that prevents blowouts until the current overload has continued for a sufficient space of time to be dangerous. They are of the renewable type and are made in all standard ratings in both the knife-blade and ferrule types.—Electrical West, April, 1934.

▼

Load Limiting Switch

Diamond Electrical Mfg. Co., Ltd., Los Angeles, Calif., has placed on the market a complete line of load limiting automatic switches designed for range and water heater installations where this type of equipment is required. The device consists of a two-coil solenoid for use on three-wire, single-phase circuits. The switch is made in two capacities, the first having a cut-out wattage of 3,000 and a cut-in wattage of 2,750 and the second a cut-out wattage of 5,200 and a cut-in wattage of 4,750. They can be furnished also for other ratings.—Electrical West, April, 1934.

▼

Automatic Timer

General Electric Co. announces the production of a new electric timer designated as Type TSA-10 which lends itself to a variety of automatic and remote-control applications. Timing is started by closing a switch. Resetting is automatic when the control circuit is de-energized. The timing period is readily adjustable over a wide range. When used as a process timer it can be arranged to operate a signal or terminate a process at the end of a predetermined period. By the use of relays and timers together, entirely automatic control can be provided for almost any process. The timer has two scales graduated in hours or minutes according to the rating of the timer. One of these scales has a range three times that of the other. This permits a wide range of time-interval selection in any given timer. The timing element is a Telechron motor, self-starting and synchronous. Rating is 1 amp. at 115 volts. Models are available for 60, 50 or 25 cycles.—Electrical West, April, 1934.

Electric Hour Counter

Weston Electrical Instrument Corp., Newark, N. P., has developed an electrically operated hour counter consisting of a special ball-bearing self-starting synchronous motor, drawing less than two watts, connected through cut gears to an indicating train on the face of the instrument. The dial runs to 9,999 hours. The instrument is designed for use in conjunction with electrical equipment which has a definite life in hours of operation and which it is desirable to replace at the end of the indicated life rather than wait for complete failure which might result in interruptions to service. It is regularly furnished for 110-volt, 60 cycle circuits but 11-volt units are also standard for connection in parallel with power tube filaments.—Electrical West, April, 1934.

▼

Pyranol Bulletin

General Electric Co., Schenectady, N. Y., has published bulletin GEA-1886 which describes the properties of Pyranols, the new cooling and insulating materials which have, in addition to the desirable characteristics of mineral oil, the distinctive properties of being non-inflammable and non-explosive. Approximately 50,000 kva. of Pyranol capacitors and more than 25,000 kva. of Pyranol transformers are in service, and Pyranol treated paper cable is commercially available at ratings of 600 volts and below, it is pointed out in the bulletin.—Electrical West, April, 1934.

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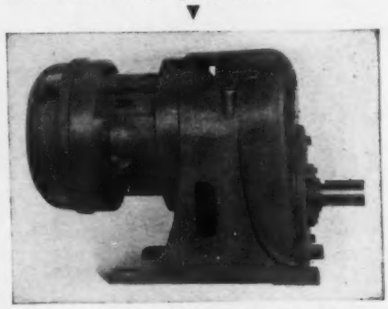

Gear Motors

Reliance Electric & Engineering Co., Cleveland, Ohio, has added single-reduction units to its line of gearmotors which can be furnished with both a.c. and d.c. motors of various types in sizes rated from ¾ hp. up. They are to be used for ratios up to 6:1 inclusive. The entire reduction is obtained in a single pair of gears.—Electrical West, April, 1934.

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Synchronous Motor Bulletin

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has published a new bulletin, No. 1165, illustrating and describing its line of bracket bearing synchronous motors. In addition to the standard line of motors for general requirements, the bulletin also treats motors with special features of construction, such as anti-friction bearings, enclosed collector rings, splash-proof type, enclosed fan-cooled type and vertical motors. It also contains a discussion of use of the synchronous motor for improvement of power factor with examples applying the graphical method for figuring power factor corrections.—Electrical West, April, 1934.

▼

Synchronous Time Switch

Paragon Electric Co., Chicago, Ill., has just placed on the market a new series of special self-starting synchronous time switches for operating thermostats, oil burners, temperature regulators, neon signs, traffic controls and machinery controls. The switch has the added feature of permitting the circuit to be turned on or off at any time ahead of the automatic setting without disturbing the normal sequence of operation.—Electrical West, April, 1934.

What's New?

Griffith Appointed Receiver for Pepco

Franklin T. Griffith, for many years president of Portland Electric Power Co., Portland, Ore., and its predecessors, was appointed temporary receiver for that property on March 5 by Federal Judge McNary on petition of Percy H. Clark of Philadelphia. Mr. Clark is a substantial stockholder of the company's 6 per cent debentures of 1950, interest on which to the extent of $480,000 was defaulted on March 1. The company has offered an exchange of 6 per cent collateral trust income bonds for these debentures (**Electrical West**, March, 1934, page 44) and to date over a million dollars worth of the $16,000,000 issue of debentures have been turned in for exchange.

The receivership petition, which was instituted with the knowledge of the company, asked for the appointment of Mr. Griffith who has consented to serve without compensation. The petition states that the receivership is "to protect property of the defendant company and to conserve and protect the interests of the stockholders and creditors and of the public." The court order directs Mr. Griffith to take immediate possession of the property and to manage it and operate it as a going concern and to apply to the courts from time to time for any orders and directions that he may deem necessary. The order enjoins the creditors, stockholders and any others from bringing proceedings of any kind against the company.

Portland Electric Power Co. operates a small interurban railway system and wholly owns Portland General Electric Co., serving electric power to Portland and vicinity, and Portland Traction Co., supplying street railway service to the City. Mr. Clark, petitioner in the receivership proceedings, is one of the former owners of the equity stock of the company before this equity was acquired by Central Public Service Co.

▼

Revise Rules for Delinquent Accounts

Application of the Utah Power & Light company for permission to modify its regulations to aid consumers of electric current who are in arrears in payment of their bills because of economic hardships, has been granted by the public utilities commissions of Utah and Idaho.

Under the new practice, consumers of all classes of service, where discounts or prompt payment premiums are involved, may pay the net amount of the current bill within the discount period without making payment in full of the balance of the delinquent account.

Faller Heads Public Service of Colorado

Guy W. Faller has been elected vice-president and general manager of Public Service Co. of Colorado to succeed the late Clare N. Stannard who died January 3. His appointment climaxes thirty-two years' association with Henry L. Doherty, president of Cities Service Co., and re-cements his relationship with Public Service Company which he left in 1930 to become district manager for Henry L. Doherty & Company, securities division, in Denver.

Mr. Faller's first utility job was in 1902 when he resigned from the navy to become engineer and electrical operator at Madison, Wisconsin, for the Madison Gas and Electric Light Co.

GUY W. FALLER

A year later he was promoted to superintendent of the plant. Ill health took him to Denver in 1905, where he served successively as engineer of gas distribution for the old Denver Gas & Electric Co. and as assistant superintendent for the Denver Gas & Electric Light Co., predecessors of the present utility.

In 1913, Mr. Faller was transferred to Amarillo, Texas, as superintendent of the City Light & Water Co. and Amarillo Street Railway Co. Two years later he was named vice-president and general manager of the two firms.

He was recalled to Denver in 1923 to become assistant manager and director of the Doherty training school for Junior Engineers. In 1924 he was elected a vice-president and director of Public Service Co. of Colorado, which was incorporated that year. In this capacity he had charge of properties outside of Denver, budget and publicity; also he continued supervision of the training school.

When Mr. Faller resigned in 1930 to assume charge of the securities department he ranked next in line of succession to Mr. Stannard. Since then he has devoted alll his energies to fiscal affairs, becoming president of Alpha Distributors, an independent organization set up to handle Doherty securities, when the federal securities act, a year ago, caused dissolution of the Cities Service securities distribution units.

Seek to Tax L. A. Municipal Utilities

Plans for a conference on the proposal that the Los Angeles, Calif., Department of Water and Power be required to pay franchises and city taxes on the same basis as privately owned utilities have been submitted to Mayor Frank L. Shaw in a resolution of the City Council. The resolution asks for a conference between the council's water and power committee and a committee of councilmen to be named by the president of the council.

The resolution states that the city's general fund is paying $1,580,000 of tax money to the department for water and electric charges this year. Under the provisions of the Riley-Stewart constitutional amendment adopted by the California legislature last year the gross receipts tax on privately owned utilities is abandoned and their operative properties returned to local tax rolls January 1, 1935. These utilities also pay the city a two per cent gross receipts franchise tax for the privilege of using streets and operating.

The council resolution proposes that the conference consider a plan whereby the department will pay into the general fund the general property tax and the two per cent franchise tax. On the basis of estimated value of the department's operative properties within the city, totaling $88,000,000, and recent figures on departmental sales for the year of $23,372,199, the department would pay $1,206,643 into the general fund in taxes.

▼

Pasadena Seeks Bids on Boulder Power Delivery

The Los Angeles Bureau of Power and Light has been asked by the city of Pasadena to submit a bid on the cost of delivering Boulder Dam power from the receiving station in Los Angeles to the Pasadena power plant when Boulder Dam power is available. Pasadena, according to City Manager C. W. Koiner, has under consideration three methods of transmitting power from Los Angeles. The first is by constructing its own line, the second is by contracting with the Los Angeles municipal system and the third by contracting with Southern California Edison Co.

According to a report on file with Mr. Koiner, prepared last fall by Lester S. Ready, consulting engineer, the Southern California Edison Co. has offered to deliver power, on a fifteen year basis, for .75 mills per kw.-hr., up to 11,880 kw. peak and for 2 mills per kw.-hr., in excess of 11,880 kw. The Edison company already has lines to Pasadena which could be utilized, and it is estimated that the amount of power Pasadena has contracted to buy from the federal government at Boulder Dam could be transmitted from Los Angeles to Pasadena by the Edison company for $45,000 a year.

Optimism For Load Building Expressed At Northwest Commercial Meeting

Enthusiasm and optimism toward the business building opportunities in all branches of the electrical business were in evidence at the ninth annual conference of the Business Development Section of the Northwest Electric Light & Power Association at Seattle, Wash., March 8 and 9. This was in marked contrast to the general spirit of last year's conference held shortly after the bank moratorium, when there was little to be optimistic about. Attendance at the Seattle meeting was greater than that of recent years and it was generally conceded to have been one of the most practically valuable meetings ever held by this section of the association. R. B. McElroy, The Washington Water Power Co., presided as section chairman.

Emphasis on the importance of commercial men in the industry was laid early in the meeting by L. T. Merwin, vice-president and general manager, Northwestern Electric Co., president of the association, asserting that it was through commercial development now that the industry might expect its salvation. L. R. Coffin, vice president, Puget Sound Power & Light Co., pointed out that rate structures are made by the people who use the service and that the price of power to the public depends more on load factor than on the cost of physical equipment.

More interest than usual centered on the possibilities in the commercial and industrial fields covered by the bureau headed by H. C. McDaniel, Pacific Power & Light Co. Air conditioning was again a subject of major interest under this bureau with discussions led by H. C. Bender, The Washington Water Power Co., chairman of this committee, bringing out the necessity of dealer-utility tie-ins, and the advantage of going after this load with the self-contained units now on the market to be sold as package goods. E. S. Riley, Frigidaire Corp., R. E. Chase, American Air Filter Co., and E. L. Weber, consulting engineer of Seattle, contributed to the air conditioning program with discussions on various phases of the subject.

Unusual interest in the possibilities in the industrial power field were created by the report of chairman of that committee, O. C. Mayer, Idaho Power Co., bringing out many ways of holding present loads and securing increases through adequate customer contact. The report of the commercial cooking committee, by Carl L. Hoffman, The Washington Water Power Co., chairman, precipitated a discussion leading to the general opinion that the design of the equipment offered in this field should be changed to meet conditions. In the report of the commercial and industrial lighting committee by L. B. Gawan, Utah Power & Light Co., chairman, read in his absence, were stressed the facts that new tools for the lighting salesmen could be put to good use, and that various allies had come into the field with advertising and promotion such as the paint people, hotels, and public health authorities.

The Rural Sales Bureau under L. C. Moore, Portland General Electric Co., chairman, presented an exposition of new methods of increasing farm load and doing business with farmers in such a way as to gain their good will, with J. C. Scott, Puget Sound Power & Light Co., and C. J. Hurd, Mountain States Power Co., leading the discussions. Mr. Scott told of his company's radio programs discussing farm problems through the interview method, with successful farmers as the interviewed persons. Mr. Hurd described the pamphlet called "Farm Electrical News" sent to all the farm customers in his territory and told of the radio course on farm electric uses offered by the Oregon State College, Corvallis. In addition, the load possibilities in certain new uses and new devices for old uses were described.

As usual the discussions under the Residential Sales Bureau, conducted by Glenn Jackson, The California Oregon Power Co., vice-chairman, were of prime interest. Methods of increasing lighting loads through home lighting service departments were told by W. E. Potter, General Electric Co., chairman of that committee.

In the electric range field, a discussion of how to reach the lower income brackets in fairly well saturated territory through some rental plan or long term credit plan received the most consideration. This subject was presented by W. C. Mainwaring, British Columbia Electric Railway Co., who had made a study of different plans in use throughout the United States and Canada.

A survey in his company territory showed an over-all range saturation of 30 per cent. There was a saturation of 77 per cent in the highest income bracket of those customers receiving monthly income exceeding $350; 53 per cent in the bracket from $250 to $349; and so on down to 4 per cent in the bracket from $100 to $149; and one per cent for those customers with a monthly income of under $100, indicating the necessity of working out some new method of reaching the lower income brackets if over-all saturation is to be increased.

The subject of heat for the kitchen of old homes being converted to electric cooking was raised by Mr. Jackson, chairman of the electric range committee, who had developed a type of kitchen heater attractive in design to fit in with modern electric range design and which could not be used for cooking.

The necessity of selling the entire company organization on the company's water heating rate and policy was declared to be paramount in any company's scheme for promoting the sale of this use by the public, in the report of the water heating committee by Tom D. Fulford, Puget Sound Power & Light Co. The report brought out many ways of selling this service, giving sales arguments that could be used in advertising and by the salesmen. The home appliance committee report by R. M. Loughrey, General Electric Co., explained the general falling off of the small appliance business in the territory by stating that the utility companies had ceased the promotion of these appliances in recent years. The report showed that the total loss in the territory in 1932 and 1933 due to inactivity amounted to $405,000 gross profit for all outlets and over $77,000 estimated annual revenue for the utility companies, or an equivalent of 2,129 range units. The report showed ways utility companies could undertake the promotion of these appliances in cooperation with all outlets.

Closely related to the development of residential business were the reports of two special committees, one on dealer relations and one on advertising. The situation as to relations with dealers was shown by Lewis A. Lewis, The Washington Water Power Co., chairman, to be somewhat improved due to the better mutual understanding brought about by closer contact between utility companies and all other outlets during recent years. The committee advocated a positive rather than negative attitude for utilities in this regard, urging that utility business development programs should be so constructed as not only to make it possible for other dealers to compete but also to encourage the participation of such outlets.

The advertising committee with A. C. McMicken, Portland General Electric Co., chairman, displayed samples of all utility advertising done in the territory during the past year and the report brought out that advertising programs should be coordinated with the sales programs, should closely coincide with company policy, and that company personnel should be adequately informed of what advertising was to be done and what it was intended to accomplish. The report was supplemented by talks by F. E. Ross, Strang & Prosser, Seattle, Raymond P. Kelley of Silverton-Kelley Inc., Spokane, and a paper by Joseph Gerber of Gerber & Crossley, Portland.

The report of the customer service committee by R. M. Bleak, Utah Power & Light Co., chairman, read in his absence by H. R. Kruse, Puget Sound Power & Light Co., posed a number of pertinent questions and offered to utility executives a number of prescriptions for improving relations with customers. In the general discussion on this subject, following the report, were brought out some of the methods used by the companies to train employees looking toward competency in their contacts with customers.

F. T. Post Answers Attacks on Utilities

Attacks on the public utilities of Washington by Senator Homer T. Bone and Governor Clarence D. Martin were answered by Frank T. Post, president of The Washington Water Power Co. in a recent talk at Pullman, Wash.

In answer to charges by Senator Bone that the Washington Department of Public Works lacked finances to proceed in investigations against the utilities, Mr. Post pointed out that in 1929 a statute was passed requiring every public service company to pay into a fund for use by the department one-tenth of 1 per cent of its gross revenue. In 1933 appropriations for the operation of the department by the state Legislature totaled $430,850. In that same year a statute was passed authorizing the department to require any public service company to pay such proportion of the cost of any investigation against it as the department might consider proper.

Replying to a charge that the department had not made regulatory orders affecting the utilities, Mr. Post stated that prior to 1933 it had made 104 valuations of utility properties and that during last year several additional valuations were ordered.

In response to a statement by the governor that "utility valuations will be washed up until they are on a sound basis and rates will be reduced and less money required for dividends," Mr. Post pointed out that only one major electric company in the state paid dividends on its common stock in 1933 and that this dividend was very small. He also stated that only one company is paying full dividends on its preferred stock. He called attention to the fact that about 150,000 people in Washington are directly interested as investors in the electric utilities.

Concerning donations to community chests and contributions to chambers of commerce which have been assailed by the governor, Mr. Post stated that "these contributions and donations are legitimate business expenses and chargeable to operating expenses or they are not. And if not the managing officers of a corporation cannot pay them without the consent of all stockholders, which in most cases, it is impossible to obtain. I am afraid that this ruling of the department until set aside by the court will hamper the charity and civic activities in every city and town in this state."

▼

Bids Received for Boulder Transformers

Bids were opened by the U.S. reclamation bureau in Denver on March 10 for the initial transformers for the Boulder Dam power plant. Bids announced on the four separate specifications were as follows:

Seven 55,000-kva., 50-60-cycle transformers; General Electric Co., $887,000; Westinghouse Electric & Mfg. Co., $910,000; Allis-Chalmers Mfg. Co., $907,000.

Seven 55,000-kva., 60-cycle transformers: General Electric, $791,000; Westinghouse, $819,000; Allis-Chalmers, $817,600.

Four 13,333-kva., 60-cycle transformers: General Electric, $104,900; Westinghouse, $111,700; Allis-Chalmers, $110,800.

Two 3,000-kva. house generators: General Electric, $45,759; Westinghouse, $44,539; Allis-Chalmers, $44,500.

The bids were submitted to the Los Angeles Bureau of Power and Light and Southern California Edison Co. for approval and contract awards are expected to me made about April 15.

¶Puget Sound Power & Light Co. has been authorized by the Washington Department of Public Works to renew $1,960,000 in promissory notes for which it has posted $3,430,000 of its refunding 1950 bonds. The department, criticized the original transaction, declaring that the pledging of a debtor's obligation to secure another obligation in a lesser amount is "economically unsound and financially unwise." The original transaction had been approved by the federal power commission in 1932 and the maturing promissory notes with the bonds as collateral now are in the hands of banks which purchased them in part on reliance on the commission's order.

Another Example of

Hydro Plant Rehabilitation

The modern, high efficiency straight-flow nozzle shown above, together with a runner of latest design, was practically all the new hydraulic equipment required to transform a thirty-year-old hydro plant into one capable of greater output with higher efficiency and lowered operating cost. It typifies the far-reaching possibilities in the field of utility plant reconstruction in spite of relatively small power demand. Such improvements assure savings in operating expense, increase dependability and safety, reduce maintenance costs and save reservoir water.

Pelton engineers will gladly share their experience and knowledge of hydro plant reconstruction with utility engineers who seek greater economies in power production.

The Pelton Water Wheel Company

HYDRAULIC ENGINEERS

120 Broadway, NEW YORK — 2919 Nineteenth St., SAN FRANCISCO — Paschall Station, PHILADELPHIA

PACIFIC COAST REPRESENTATIVES for Baldwin-Southwark Corp., De La Vergne Engine Co., Larner Engineering Co. and Cramp Brass & Iron Foundries Co.

PELTON

Boulder Transmission Line Shows Progress

Twelve crews are erecting an average of twelve steel towers per day on the Boulder Dam transmission line of the Los Angeles Bureau of Power and Light. By the middle of March approximately 300 of the towers, which will carry the 275,000-volt double-circuit transmission line, had been erected. In all 2,800 single- and double-circuit towers will be required.

According to E. F. Scattergood, chief electrical engineer and general manager of the power bureau, it is expected to have the transmission line completed not later than September, 1935, when the Boulder Dam plant is expected to be ready to generate power.

Approximately $22,800,000 is being spent by the Bureau of Power and Light to transmit and distribute this power. Major items in the program include: Transmission line proper with two switching stations, $15,711,000; step-down station east of the South Central Avenue receiving station in Los Angeles, $921,000; transmission line extension to a receiving station to be erected in the southwest area of Los Angeles, $1,704,000; facilities for a new receiving station, $1,689,000; receiving station to be erected in southwest Los Angeles, $1,567,000; tie line facilities at North Main St. receiving station, $374,000; tie line facilities for new receiving station, $346,000 and tie line facilities at the Wilmington receiving staton, $488,000.

▼

¶ **H. H. Walker and Fritz Ziebarth,** Los Angeles and Long Beach electrical contractors, respectively, with a joint tender were low bidders for the erection of 250 miles of 156-kv. transmission line between Great Falls and Fort Peck, Mont., when bids were opened at the U.S. Army Engineers' office at Kansas City, March 17. Both of these contractors have been active in the erection of transmission lines for the construction of the Colorado River Aqueduct in southern California. The Montana line is for the purpose of supplying energy for the construction of the Fort Peck project on the Missouri River.

▼

¶ **Erection** of a hydro-electric plant, estimated to cost $580,000, may be undertaken by the city of Lodi, Calif., if voters react favorably at a special bond election planned for April 23 by the city council. Resolutions have been passed by the council setting the election for that date. In a statement regarding details for the plant and dam on the Mokelumne River, the council called attention to a report by Malcolm A. Eckart, F. C. Herrman and Walter L. Huber which states that power can be brought to the city at a cost of approximately 4 mills per kilowatt-hour. This statement points out that the building of the plant depends upon securing a federal loan and grant covering the $580,000 in bonds, provided these are voted.

Northwestern Value Set at $9,412,827

Another step in the protracted valuation and rate proceeding against the Northwestern Electric Co., Portland, Ore., was taken by Charles M. Thomas, state public utilities commissioner, in his order March 13 fixing the valuation of the company's property in Oregon at $9,412,827.52 as of December 31, 1932.

Evidence presented in the hearings by the company tended to place the valuation of this property at about $13,800,000. The commissioner indicated this order would be followed by one fixing lower electric rates based on his revised valuation.

This case has been in progress in its many phases since April, 1928. In one phase of the proceedings the commissioner issued an order lowering the company's rates which was promptly enjoined in the Federal court. Subsequently the commissioner withdrew that order, proceeding with a more thorough investigation of the company's property involving physical inventory and appraisement, hearings on which were completed last October.

▼

Denver Embarks on New Cooperative Plans

An interesting experience in service has been inaugurated by Public Service Company of Colorado. A new outdoor lighting department in charge of Dana W. Rowten, illuminating engineer, has been organized as a promotional aid for electrical contractors, dealers and others who sell or install night lighting equipment. Advice or consultation is free. Customers who contemplate illuminating their gardens, homes, garages or yards are also eligible to the service.

This department is an outgrowth of Rocky Mountain Electrical Association sales rally plans. It ties in closely with the imminent city-wide garden lighting contest which will extend from early summer until late fall. Mr. Rowten has had signal success in the field of outdoor lighting, being responsible for many important installations to service night athletics, and electric advertising displays for filling stations and other business concerns. In his present capacity he will make no direct effort to sell, but will be available as a cooperating agency to achieve the best results for merchandiser, contractor and customer.

A home laundry equipment week under the sponsorship of the R.M.E.A. appliance division took place March 19-24 in Colorado, Wyoming and New Mexico. This tri-state observance is part of the sales rally schedule. Display windows, show rooms, advertising and other mediums were used to feature electric washers, ironers and other laundry equipment. In Denver, a $25 prize for the best window display added competitive zest to the activity.

B. K. Sweeney, Inc., handling General Electric appliances, has opened its second retail store in Denver. The new location is in the heart of the business district. The Collier Electric & Radio Co. has moved nearly two miles closer to Denver's retail center, from 1898 South Broadway to 52 South Broadway. W. A. J. Guscott, veteran contractor and president of the Denver Electrical Contractors' Association, found quarters too crowded in the Chamber of Commerce building; so he moved around the corner to the Railway Exchange building where he has more room.

▼

¶ **Hearings** before a master in chancery through which the Pacific Gas and Electric Co. seeks to establish as confiscatory the rates reducing the price of natural gas recently ordered by the California Railroad Commission have been postponed until April 16. The continuance was asked by the company to allow time for preparing additional evidence. The commission has ordered a hearing for April 10 to consider steps for arriving at a compromise in the case.

PROFESSIONAL SERVICES

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MECHANICAL AND ELECTRICAL ENGINEER
Specializing Industrial Plant Problems
Power Rates and Disputes
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Wholly-owned Subsidiary of
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New York Pittsburgh San Francisco

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Electrical Photometrical, Chemical and Mechanical Tests. Inspection of Materials and Apparatus at Manufactory
80th St. and East End Ave., New York

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CONSULTING ENGINEER
Reports and Valuations, Public Utility Industrial Properties
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THE J. G. WHITE ENGINEERING CORPORATION
Engineers—Contractors
Oil Refineries and Pipe Lines, Steam and Water Power Plants, Transmission Systems, Hotels, Apartments, Office and Industrial Buildings, Railroads.
43 Exchange Place New York

Conference Discusses Bonneville Power

TO vision an orderly coordinated development of all the resources of the Pacific Northwest for a fuller and more completely satisfactory economic and social existence for all the people was the stated purpose of the Pacific Northwest regional planning conference held in Portland, Ore., March 5 to 7, 1934, under the auspices of Emergency Administration of Public Works.

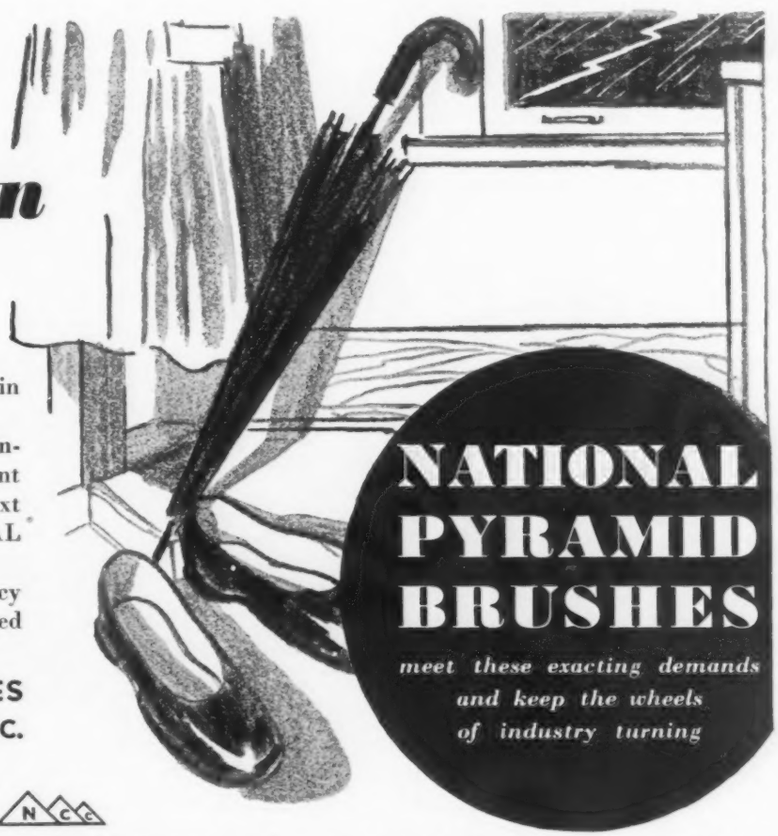
Much interest centered around the economic use of Bonneville and Grand Coulee power in the section on water resources and power and again in the section on industries and commerce. These sections were told by Col. John P. Hogan, consulting engineer, New York, a member of the consulting staff on the Bonneville Dam project, that stimulation of industrial development is the key to the sale of Bonneville power. Assuming that 2.8 billions kw.-hr. at Bonneville are reasonably firm and commercially saleable, and assuming that this power were to be distributed among 800,000 people who could be economically reached, it would require consumption of 5,000 kw.-hr. per year per person. Even in New York state with Niagara Falls and a highly industrialized population, only 1,000 kw.-hr. per capita per annum are consumed in all industrial and commercial use.

In the consideration of industrial development, the power investment is only the beginning. For every dollar invested in power development, from $10 to $20 must be found to provide factories and equipment for its use, housing employees and new population, and other investments of a collateral nature. Assuming Bonneville power to cost $50 million, there must be found, largely from private investors, from a half billion to a billion dollars of this kind of investment money, and in addition, a large amount of public capital must be provided for municipal utilities and facilities for the increased population. If this capital is to be attracted, the general scheme of industrial development must be wisely planned.

Colonel Hogan continued: "There are suggestions for hundreds of miles of 220,000-volt transmission lines. Building a transmission line into the desert of Sahara will not sell any power and the builder would inevitably go bankrupt. Transmission lines should be built only for a demand that exists or can be created, and of a sufficient size only to satisfy that demand. They shou'd be self-supporting and if the demand increases beyond expectation, they can be economically enlarged. The logical initial step is to take some of the power to Portland where it can be economically distributed either through existing facilities or by a modest system of independent lines, if the people so elect."

D. C. Henny, Portland, another consultant on the Bonneville project and chairman of the state Bonneville Dam Commission, went a step further and urged that the price of Bonneville power be set low enough so that other factors less favorable to industrial development in the region might be offset to some extent. He pointed out that while transportation, land, climate and living conditions in the neighborhood of the Bonneville site were generally favorable, its distance from world markets and the lack of raw materials in the immediate vicinity would operate to discourage the investment of private capital and the development of certain industrial possibilities the dam was supposed to possess unless the price for power could be set at an extremely low figure. He urged, therefore, that the government base its price for this power not solely on the cost of the project, allocating the major portion of this cost to power, but that it recognize the indirect benefits from a large industrial development, and set the price at a point low enough to offset some of the disadvantages in the competitive situation. He intimated that it was doubtful if the entire cost of the project could be amortized in a reasonable length of time through the sale of power, and stated that it didn't make any difference whether the government lost money on the power end of its deve'opment or on the navigation end. This is less a question of engineering than a question of government policy.

When Precaution Pays



READINESS always pays—especially in the emergency.

Careful, periodic inspection and timely maintenance of motors and generating equipment are the first precautionary steps. The next step is the installation of NATIONAL PYRAMID BRUSHES.

Then you are prepared for emergency demands, rush hour peaks and prolonged overloads.

NATIONAL PYRAMID BRUSHES

NATIONAL CARBON COMPANY, INC.

Carbon Sales Division, Cleveland, Ohio

Unit of Union Carbide and Carbon Corporation

Branch Sales Offices:

New York Pittsburgh Chicago San Francisco

NATIONAL PYRAMID BRUSHES

meet these exacting demands and keep the wheels of industry turning

OUR THOROUGHLY TRAINED REPRESENTATIVES ARE ALWAYS AT YOUR SERVICE

¶**J. M. Bourus** has been made general auditor of the San Diego Consolidated Gas & Electric Co. In addition he was elected assistant treasurer of the company. He came to the San Diego company in 1918 as a clerk in the accounting department following eight years of service with the Oklahoma Gas & Electric Co. He became assistant auditor in November, 1927.

▼

¶**Ben H. Parkinson,** for many years connected with the accounting department of Pacific Power & Light Co. and Northwestern Electric Co., Portland, and recently office manager for these companies and Portland Gas & Coke Co., has been transferred to the position of commercial manager for Portland Gas & Coke Co. Thus transferring his interest from accounting to sales, and from electric to gas, Mr. Parkinson's activity in the accounting section of the Northwest Electric Light & Power Association will be missed by many of his former colleagues in the other electric utility companies in the territory.

¶**James E. Jordan,** superintendent of distribution of the El Paso Electric Co., El Paso, Texas, died suddenly Feb. 21 after an emergency operation. Mr. Jordan had been with the company since 1919, first as superintendent of installations and later as superintendent of distribution.

▼

¶**Frederick Eaton,** known as the "father of the Los Angeles aqueduct," died March 9 at his home in Los Angeles, at the age of 79 years. Mr. Eaton, first superintendent of the city water department, one of the first city engineers and at one time mayor of the city is regarded as the first person to take active steps toward the development of a water supply for the city through utilization of water-bearing lands in the Owens Valley. Mr. Eaton was the sixth white child born in Los Angeles. He attended the city's grade schools and later studied engineering at Santa Clara University. As chief engineer for the Los Angeles railway, he built the city's first electric railway line.

▼

¶**Bernard MacParland,** one of the few remaining electrical men who started in the earliest days of the industry, passed away February 7 at this home in Los Angeles. He was 56 years of age. Coming West in 1920 from his home in Lansing, Mich., Mr. MacParland joined the Associated Oil Co. in 1922 where he rose to superintendent of electrical construction, his position at the time of his death. Together with the engineers of the Southern California Edison Co. Ltd., he laid out the illumination system for oil drilling rigs, a system which since has become standard and is responsible for a large saving in cost in night drilling and for reducing accident hazzards incident thereto. The electrical industry and his many friends deeply regret the passing of another pioneer.

▼

¶**Walter D'Arcy Ryan,** famous General Electric illuminating engineer, who lighted the Panama-Pacific International Exposition at San Francisco in 1915, died in Schenectady March 14 of heart trouble.

▼ ▼ ▼

Barometer

Industrial activity in the Western states during February continued on the upward trend that had been in evidence more or less consistently since the summer of 1932 and that has been of pronounced strength for nearly a year. Reports of electrical energy consumption in manufacturing plants show a rise in the weighted average of 28 per cent compared with February, 1933. Taking into account the difference in the number of working days, the reports indicate an improvement of 10 per cent over January.

Operations have returned to the level of February, 1930, and are well over those of the same month in the intervening years.

Of the industries listed, the manufacture of rubber products made the greatest gains over last year, rising apparently in response to the stimulous of the vigorous activity in the automobile industry; in making the comparison the exceptional weakness a year ago should, however, be taken into consideration. More important is the increase of 77 per cent in the metals group, although this group is still lagging compared with earlier years.

Increased demand for the materials of construction is indicated by recent higher levels in the lumber and stone groups.

Index of Manufacturing Activity in the Western States

(All figures adjusted for number of working days)

	Feb. 1934	Jan. 1934	Dec. 1933	Nov. 1933	Feb. 1933
All Industry	130 0	118 2*	115.3	116.9	102.0
Chemicals	100.5	93.0*	92.7	86.0	79.8
Food products	133.3	121.0*	116.3	118.9	118.2
Metals group	79.5	71.0*	77.5	76.3	44.8
Lumber	181.0	165.4*	156.7	162.8	144.8
Paper and pulp	161.0	145.6	129.4	135.0	127.0
Rubber products	117.0	96 8*	84.0	97.5	46.8
Shipbuilding	146.0	126.8	118.0	123.0	122.3
Stone, clay and glass	126.2	117.5	122.3	120.0	83.7

*Revision

THE MANUFACTURERS' DIRECTORY

¶In these pages is a directory of electrical manufacturers, their Western offices and Western representatives—a valuable source of buying information to the subscribers of ELECTRICAL WEST. It is as accurate and complete as the publishers could make it; no charge is made for a listing and every manufacturer operating in this territory is privileged to be included. ELECTRICAL WEST does not guarantee the information, however, and assumes no responsibility for errors or omissions. Subscribers are respectfully requested to notify the publishers of any corrections or additions that should be made.

¶Under each manufacturer are listed the Western branch offices or representatives. Where such information is not listed, the manufacturer has no representation in the territory or has reported none. If the distribution of a product is through wholesalers only, this also is indicated. To use the directory, find the manufacturer's listing and call upon the nearest branch office or agent. If the name of the manufacturer is not known, turn to the "Where to Buy It in the West" guide immediately following and look under the name of the product in which you are interested.

A-A ELEC. MFG. CO., THE, Bridgeport, Conn.—Alexander W. Bromberg, Los Angeles.

ABOLITE REFLECTOR CO., West Lafayette, O.—Jos. Paulson, Portland; Myers & Schwartz, San Francisco; W. E. Welborne, Los Angeles; W. E. Young, Denver.

ADVANCE BATTERY CORP., Brooklyn, N.Y.,—G. C. Maudslay, Los Angeles.

AIR PREHEATER CORP., THE, Wellsville, N. Y.—R. E. Chase & Co., Seattle, Tacoma; F. J. Hearty, San Francisco; W. Z. Harrison & Co., Salt Lake City; Joy & Cox., Inc., Denver.

AIRWAY ELECTRIC APPLIANCE CORP., Toledo, Ohio.—Montgomery Bros., Seattle, San Francisco, Los Angeles.

ALLEN CO., INC., L. B., Chicago, Ill.—H. B. Squires Co., San Francisco, Los Angeles, Seattle.

ALLEN BRADLEY CO., Milwaukee, Wis.—Garland-Affolter Eng. Corp., Seattle, San Francisco; Zinsmeyer, Inc., Los Angeles; Peterson Co., Denver.

ALLIANCE MFG. CO., Alliance, O. —D. L. Herman, Seattle; Gillan Sales Co., San Francisco, Los Angeles.

ALLIS-CHALMERS MFG. CO., Milwaukee, Wis.—District Offices: Seattle, Portland, San Francisco, Los Angeles, Denver, Phoenix, Salt Lake City.

ALLIS CO., THE LOUIS, Milwaukee, Wis.—Three Engineers Co., Seattle; A. H. Coates Co., San Francisco; Sterling Elec. Motors, Inc., Los Angeles; O. H. Davidson Equip. Co., Denver; C. F. Cate, Albuquerque.

ALLOVER MFG. CO., Racine, Wis. —Kemp Cutlery Co., Portland.

ALL-STEEL-EQUIP. CO., Aurora, Ill.—I. P. Bean, Seattle; Jas. J. Noble, San Francisco; W. S. Sweet, Los Angeles.

ALPHADUCT CO., Jersey City, N. J.—Garnett Young & Co., Seattle, Portland, San Francisco, Los Angeles.

ALTORFER BROS. CO., Peoria, Ill.—E. P. Becker, Pacific Coast Mgr., Los Angeles. Wholesalers.

ALUMINUM CO. OF AMERICA, Pittsburgh, Pa. — Branch offices: San Francisco, Los Angeles.

AMERICAN BLOWER CORP., Detroit, Mich.—Branch Offices: Seattle, Tacoma, Portland, San Francisco, Los Angeles, Salt Lake City, Denver.

AMERICAN BRAIDING CO., Holyoke, Mass.—Keeler White Co., San Francisco.

AMERICAN CIRCULAR LOOM CO., INC., New York City—C. R. Dederick, Portland,: Utilities Supply Co., Los Angeles; Paul A. Douden, Denver.

AMERICAN CROSSARM & CONDUIT CO., Chicago, Ill.—Tidewater Crossarm & Conduit Co., H. B. Pearne, Western Dist. Mgr., Chehalis, Tacoma.

AMERICAN ELEC'L HEATER CO., Detroit, Mich.—R. G. Ellis, Los Angeles; O. F. Nats, Denver.

AMERICAN ELECTRIC SWITCH CORP., THE, Minerva, O.— Irving P. Bean, Seattle; Thos. D. Noble Co., San Francisco; J. G. Kirkpatrick, Los Angeles; Laughlin Sales Co., Denver.

AMERICAN FOUNDRY EQUIPMENT CO., Mishawaka, Ind.—Fred W. Carlson, Seattle; E. I. Rodgers, San Francisco; R. H. Maples, Los Angeles.

AMERICAN LAFRANCE & FOAMITE IND., INC., Elmira, N. Y.—Branch Offices: Seattle, San Francisco, Los Angeles, Denver, Houston.

AMERICAN STEEL PIPE SALES CO., Irvington, N. J.—A. W. Bromberg, San Francisco, Los Angeles.

AMERICAN STEEL & WIRE CO., Chicago, Ill.—Columbia Steel Co., Seattle, Portland, San Francisco, Los Angeles.

AMERICAN TRANSFORMER CO., Newark, N. J.

American Transformer Co.
178 Emmett Street
Newark, N. J.
Industrial Transformers
Testing Sets
Voltage Regulators

ANACONDA WIRE & CABLE COMPANY, New York, N. Y.—Branch Offices: Seattle, San Francisco, Los Angeles.

ANCHOR WEBBING CO., Pawtucket, R.I.—Marwood, Ltd., Seattle, Portland, San Francisco, Los Angeles.

ANDERSON, ALBERT & J. M., Boston, Mass.—Graybar Elec. Co., all principal cities.

ANDERSON-PITT CORP., Kansas City, Mo.—Fred C. Wood, Portland; Ben C. Holst, San Francisco; Alex Sims Co., Los Angeles.

APEX ROTAREX MFG. CO., Oakland, Calif.—Branch Offices: Seattle, Portland, San Francisco, Fresno, Sacramento, San Jose, Los Angeles, Long Beach, Salt Lake City, Phoenix.

APPLETON ELECTRIC CO., Chicago, Ill.—Branch Offices: San Francisco, Los Angeles.

ARROW ELECTRIC DIV., Hartford, Conn.—Branch Offices: Seattle, San Francisco, Los Angeles.

ARTHUR & FOWLER CO., Portland, Ore.—A & F Sales Corp., Portland.

ART METAL CO., THE, Cleveland, O.—Baker Smith Company, Seattle, San Francisco, Los Angeles.

ATLAS LEATHER CO., Caseyville, Ill.—Andrews Equipment Service, Portland; Globe Electric Works, San Francisco; Hurt Conveyor Co., Los Angeles.

ATWOOD & MORRILL CO., Salem, Mass.—Ray Smythe, Portland; Oliver B. Lyman, San Francisco; John G. Bell & Co., Los Angeles.

AUSTIN CO., THE M. B., Chicago, Ill.—The J. G. Pomeroy Co., San Francisco, Los Angeles.

AUTH ELECTRICAL SPECIALTY CO., INC., New York City.—Robinson Sales Co., Seattle, Portland; Thos. D. Noble, San Francisco; Electric Sales Co., Los Angeles; Wesco Co., Denver; J. A. Dupree, San Antonio.

AUTOMATIC ELECTRIC HEATER CO, INC., Pottstown, Pa.—Clyde L. Chamblin, San Francisco.

AUTOMATIC WASHER CO., Newton, Ia.—C. J. Reid, Branch Mgr., Los Angeles.

AUTOVENT FAN & BLOWER CO., Chicago, Ill.—John H. Marvin Co., Seattle; Clark Keeler, San Francisco; J. E. Dwan, Inc., Los Angeles; A. Wallace & Co., Denver; Inter-State Equipment & Supply Co., Salt Lake City.

BAILEY METER CO., Cleveland, O. —Branch Offices: San Francisco, Denver, Houston.

BAKELITE CORP., New York City —Electrical Specialty Co., Inc., Seattle, San Francisco; Electrical Specialty Co. of So. California, Los Angeles.

BAME, H. A., New York City—W. J. Raczka, Los Angeles, Calif.

BARKELEW ELECTRIC MFG. C., Middletown, O.—Electrical Specialty Co., Seattle, San Francisco, Los Angeles.

BARLOW & SEELIG MFG. CO., Ripon, Wis.—H. S. Labisky, Pacific Coast Mgr., Seattle; H. W. Randall, Oakland; R. D. Wood, Long Beach; Geo. A. Lowe, Co., Ogden.

BARTLETT HAYWARD CO., THE, Baltimore, Md.—F. W. Stevens, Portland; Oliver B. Lyman, San Francisco; Thomas Machinery Co., Los Angeles.

BEARDSLEY & WOLCOTT MFG. CO,. Waterbury, Conn.—Eckert-Lloyd Corp., Portland, San Francisco, Los Angeles; Laughlin Sales Co., Denver.

W. D. HOWZE SALES CO.
Representing
Bowie Switch Co.
Electroline Co.
Automatic Splices and Deadends
Palnut Company—Locknuts
Anchors and Guying Fixtures
Manufacturers of
"HIGH VOLTAGE"
Signs . . . Durable . . . No paint . . . Non-rusting . . . No radio interference.
333 West 2nd Street
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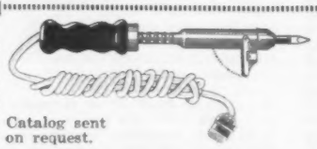
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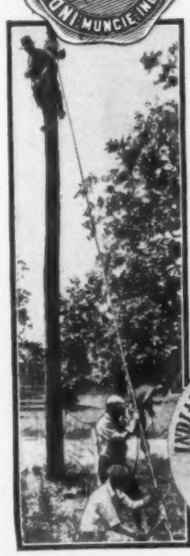
Crapo
GALVANIZED PRODUCTS

Steel Strand
• • •
Telephone Wire

ECONOMIZE with safety by using *Crapo* Galvanized Steel Strand and Wire on all new and replacement jobs.

The heavy, pure zinc coating, thoroughly bonded to the wire, resists corrosion, increases durability and substantially lowers maintenance costs.

Be sure to specify genuine *Crapo* Galvanized Products! Representative Jobbers in all principal jobbing centers are ready to supply you on instant notice.



Indiana Steel & Wire Company
Muncie, Ind.

G-E Pyranol Capacitors have a SERVICE RECORD of over 99.87%

THE full benefits of power-factor improvement can be realized only when the operation of the improvement equipment is uninterrupted. The equipment need be out of service for only a short time to reduce, and in some cases completely eliminate, the savings in power costs which it has been installed to make. The service record of G-E capacitors has proved their high degree of reliability and the permanency of their operating characteristics.

This practically perfect service record has been attained only by exercising rigid laboratory control over:

1. The selection of materials — requiring continual inspections and tests to assure purity and uniformity.

2. The methods of manufacture — involving special facilities for keeping out the slightest particle of contamination that might cause internal failure.

3. The treating process — the most important single factor — requiring removal by heat and vacuum of all water and gas from the dielectric assembly, followed by complete saturation with Pyranol.

Let us tell you more about G-E Pyranol-treated capacitors. Simply mail the attached coupon.

NRA
WE DO OUR PART

GENERAL ELECTRIC

General Electric Company, Dept. 6Q-201,
Schenectady, N. Y.

Gentlemen:
Please send me a copy of your practical bulletin, "Improving Power-factor for Profit," GEA-77F.

Name.....

Company.....

Address.....

360-91

Yardsticks and Sales

FUTURE prosperity of the light and power business depends upon an immediate increase in volume of business. Tax burdens, increased costs brought on by compliance to NRA, surplus power, subsidized competition of government "yardsticks," rate agitations and regulatory pressure, individually or collectively, constitute a menace, the dangers of which will only be offset by accretions in business that will permit reductions in rates. And this increase in business will only come from industry selling.

The problem has been put succinctly by George Whitwell of Philadelphia, chairman of the E.E.I. Sales Section, as follows:

"Greatly increased and continuously increasing taxes, together with materially enlarged operating expenses resulting from the National Industrial Recovery Act, will have to be paid by electric utility companies at the same time that government yardsticks, regardless of whether they are fairly competitive or not, will bring upon these companies the necessity for lower average rates in order to induce more widespread use of electricity by residence and small commercial customers.

"I can see no need, particularly, for bewailing the imposition of this problem. Perhaps it has been a blessing in disguise, if because of the unjustness and unsoundness of the attack, the electric utility industry can obtain a much greater unity of constructive thought and action. Certainly it has been a blessing if it spurs us, who are charged with the sale of electricity, into the formulation, each for his own territory, of sound plans which, creating greater sales, will permit us to meet the problem."

Unfortunately the government can set rates to build load, absorbing losses by direct appropriations from tax funds, while the industry must build load in order to lower rates. Attention then, must center on ways and means of developing additional usage that will permit lower schedules. Here on the Pacific Coast average rates are lower and average use is relatively higher than in other sections of the country. But the problem is no less acute.

More appliances must be sold and used. This applies not only to ranges, water heaters and refrigerators, those major load-builders that will do the job most quickly, but to lighting and smaller appliances as well. There are many customers in the minimum use class who return no profit to the utilities at present rates and who would become greater liabilities were rates to be reduced. This great group can only afford appliances at low unit prices.

Responsibility for drafting sales plans that will permit all-industry participation rests with the power companies. The immediate problem is theirs. If such plans are sound and workable, the utilities will find that they will have the active support of every branch of the industry.

▼

Distributor's Job

THE very nature of cooperative business-getting drives is such that it requires a tremendous amount of preparation. Not the least of this is the preparation of the dealers who are to cooperate with full instructions and information as to how best to tie in with the program to obtain the best results. Too often this is left to a mimeograph machine alone.

Dealers, on the other hand, have a thousand problems and interests claiming their limited time and attention. These multitude of conflicting interests are very apt to keep them so occupied that they may never get around to finding out about a cooperative advertising effort designed to aid them to sell their wares until weeks after the campaign is over.

It is in this situation that the wholesaler or distributor has his great opportunity to prove that his function in distribution is a vital and indispensable one. It is here that the distributor can come to the direct assistance of his dealers, acquaint him personally with the details of the campaign, help him prepare for it with window displays, advertising, sales training and stock.

It is not enough merely to add one more mimeographed form letter to the mass that comes to the dealer's desk every day. It is a personal selling and grooming job, and will earn profit for the distributor in the long run in an increased movement of his products to market.

the New ELECTRICAL WEST

Established 1887

With which is consolidated "Journal of Electricity"
Published Monthly at 883 Mission St., San Francisco,
by the McGraw-Hill Company of California.
Member Audit Bureau of Circulations
Member Associated Business Papers

STAFF

C. W. Leihy, *Publishing Director*
Roy N. Phelan, *Sales Manager*
George C. Tenney, *Editor*
William A. Cyr, *Associate*

Our fifty favorite dealers

PURE nonsense . . . of course it is. Naturally we have no favorites. But you might think we had if you knew that fifty dealers made more money last year as a result of money we spent. How did they do it?

They syncronized their advertising with ours. They published more than 500 tie-in advertisements in their local, home town newspapers. They invested in 5166 column inches of newspaper space—the equivalent of 32 full eight column pages. And they backed it up with direct mail, window and floor displays and, in several cases, methodical house-to-house canvassing. Did it pay?

In 1933 there were only 5% more tie-advertisers than in the previous year, but *the volume of tie-in advertising was 31% higher.* Every year, in fact, since the Dealer Bulletin was first published, tie-in participation has gone steadily up.

Our point is this: A few dealers are tying in with P. G. and E. promotional advertising and are getting results or, obviously, they would not increase the number and size of their tie-ins year by year. But the fact remains that only a fraction of the appliance-demand being created by our sales promotion is being converted into *sales*. Records show that at least 1200 dealers are able profitably to tie in, yet 94% of the tie-in advertisements are traceable to only fifty dealers. Our 1933 business building program in which we invested more than a quarter of a million dollars was a valuable sales stimulant to these fifty dealers . . . *because they made themselves a part of it*. But to hundreds and hundreds of others it was just so much water over the dam.

A new year is beginning and with it a new series of cooperative drives. Four campaigns will be sponsored by this company, three by the Gas Appliance Society and six by the Electric Appliance Society. Each of these offers an opportunity for cooperation among progressive merchants. Each, regardless of its sponsorship, will be whole-heartedly supported by us. The more dealers participate, the better it will be for everyone. If you are not one of them already, the fifty "regulars" will welcome you to their ranks.

P·G·and E·

PACIFIC GAS AND ELECTRIC COMPANY

Owned · Operated · Managed by Californians

Daily the mailman brings proof that people — *lots* of them — are being influenced by the Bureau's persistent advertising in home, farm, commercial and industrial fields.

• • •

April advertisements sponsored by the Bureau will sell:

- ☐ Red Seal wiring and re-wiring
- ☐ Refrigeration (Home and Dairy)
- ☐ Portable farm motors
- ☐ Correct-speed electric pumping
- ☐ Electric cookery

Cut out this list as a reminder to take advantage of the Bureau's merchandising activities. *Tie in with them for your own greater profit!*

PACIFIC COAST ELECTRICAL BUREAU

447 SUTTER STREET, SAN FRANCISCO